TEXTILE WORLD

APRIL • 1945

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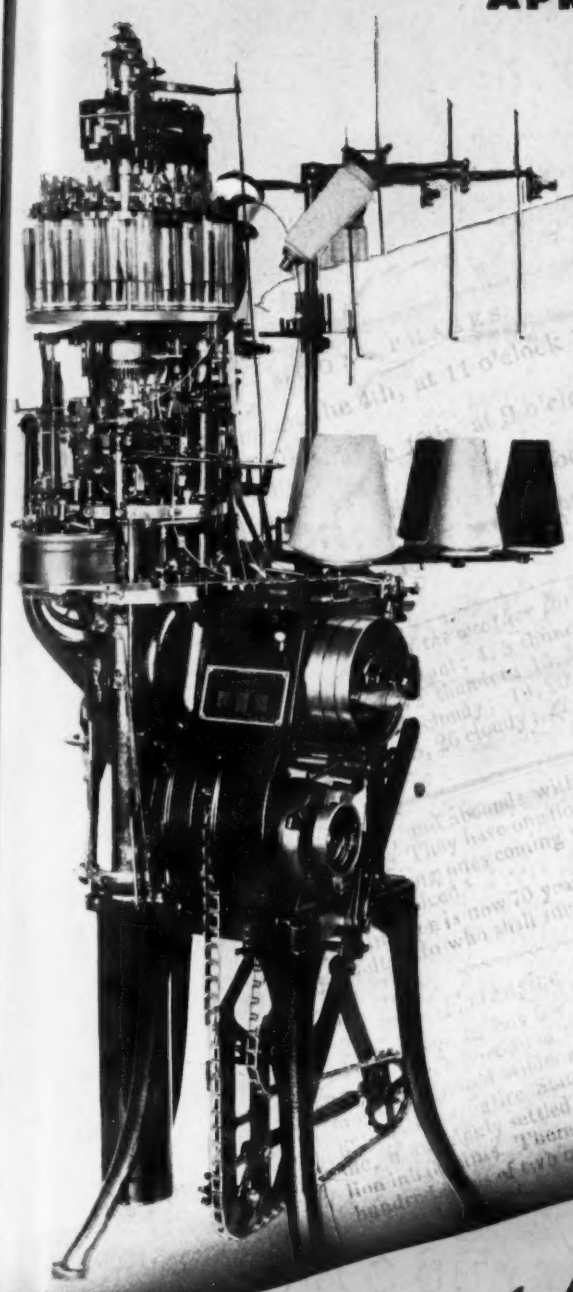
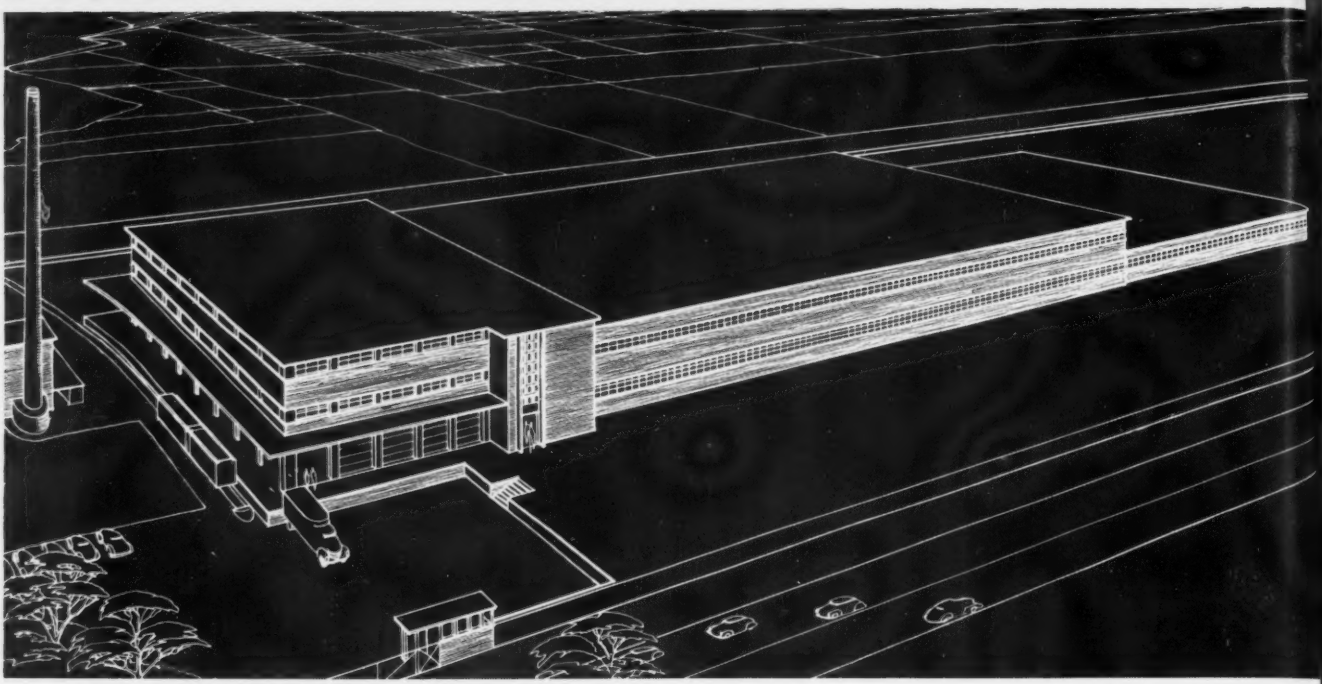


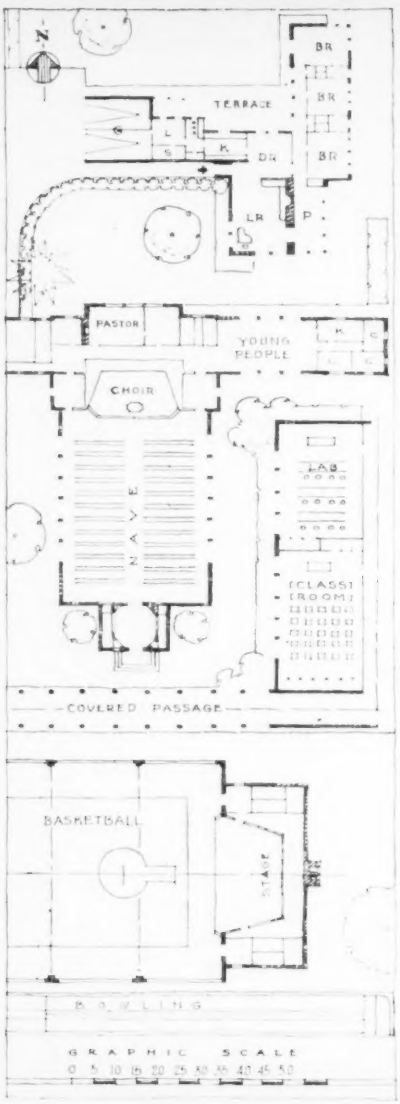
hosiery of all kinds of perfect shape, without seam or blemish, with a rapidity and cheapness hitherto unparalleled. Each machine will knit *one sock per hour*, while one girl can easily tend *ten* machines, and *five hundred* machines may be turned by one horse power. Rev. John Pierpont declares it the greatest mechanical invention of the age. Unlike the clumsy and cumbrous stocking machines of former days, it weighs but three pounds, and may be placed on the centre table of any lady's drawing room. It will knit cotton, woollen, silk, or any fabrick, from the finest to the coarsest.

100 Years of Circular Knitting

PAGE 104

ROTARY KNITTING LOOM.—Mr. Erasmus French, of Springfield, Conn. has, after much labor and study, invented a machine which knits stockings and





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ATLANTA

TWENTY-SEVEN YEARS NATIONWIDE EXPERIENCE IN TEXTILE AND COMMUNITY DEVELOPMENT

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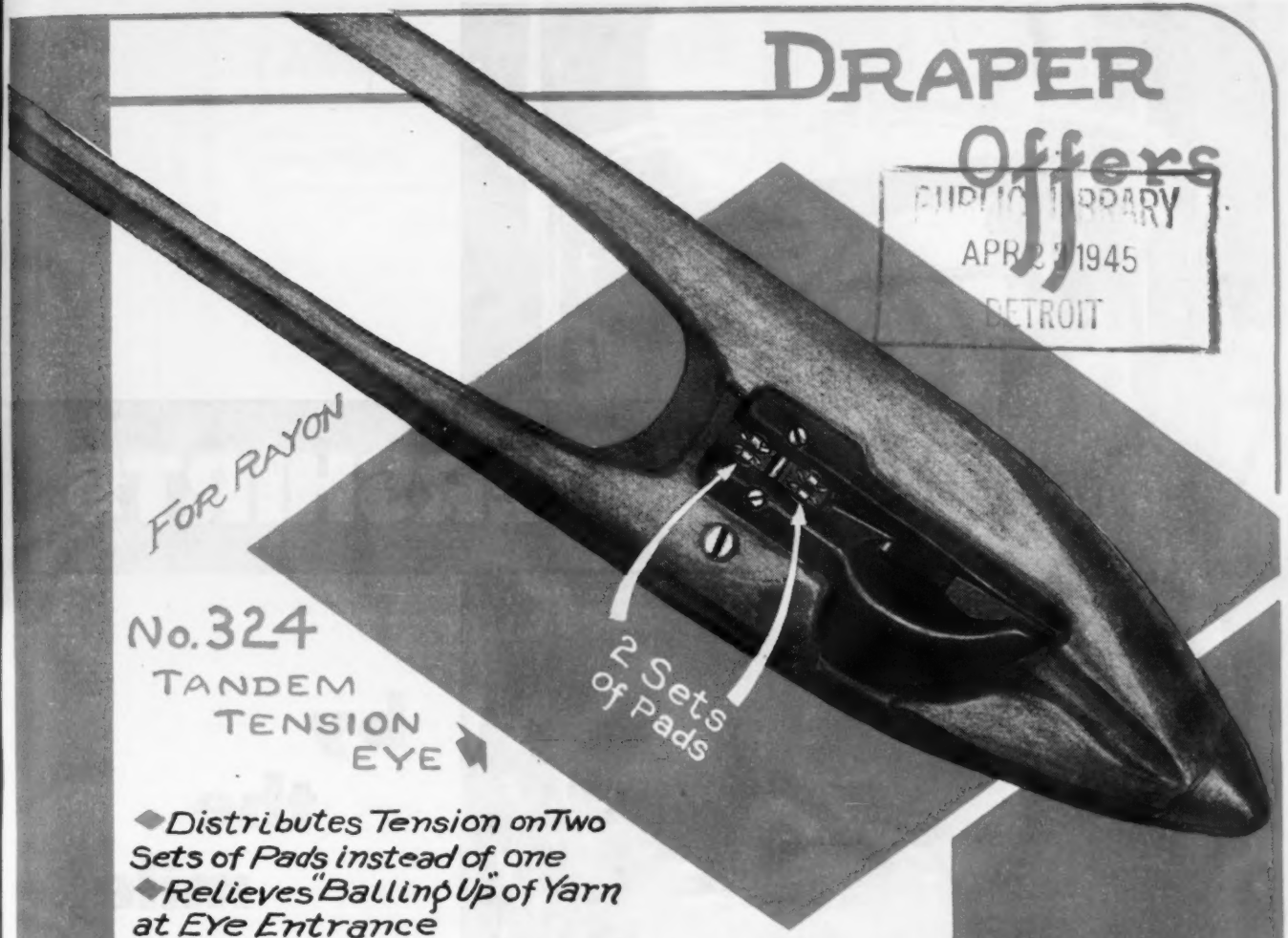

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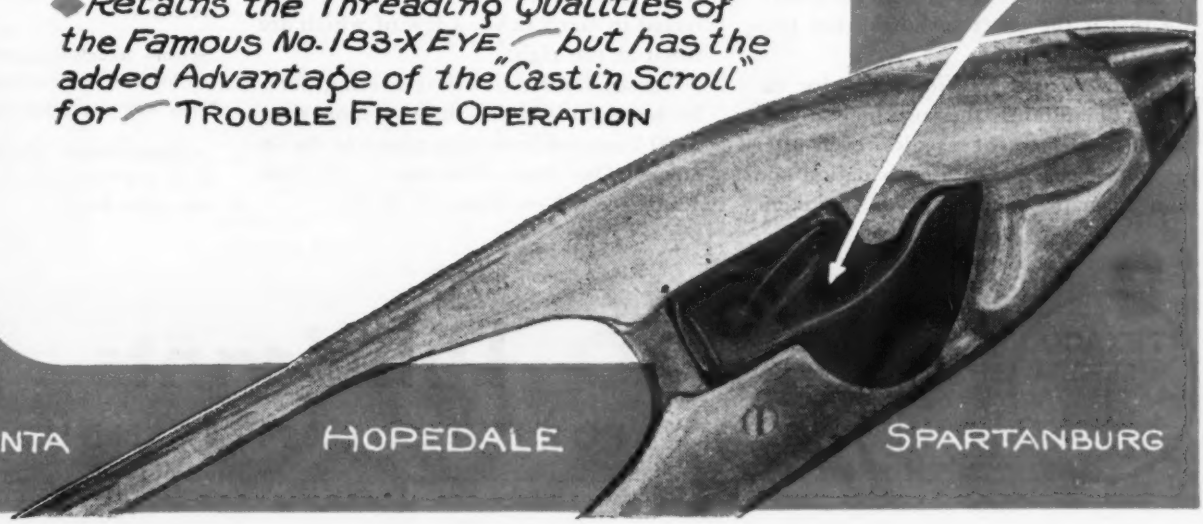

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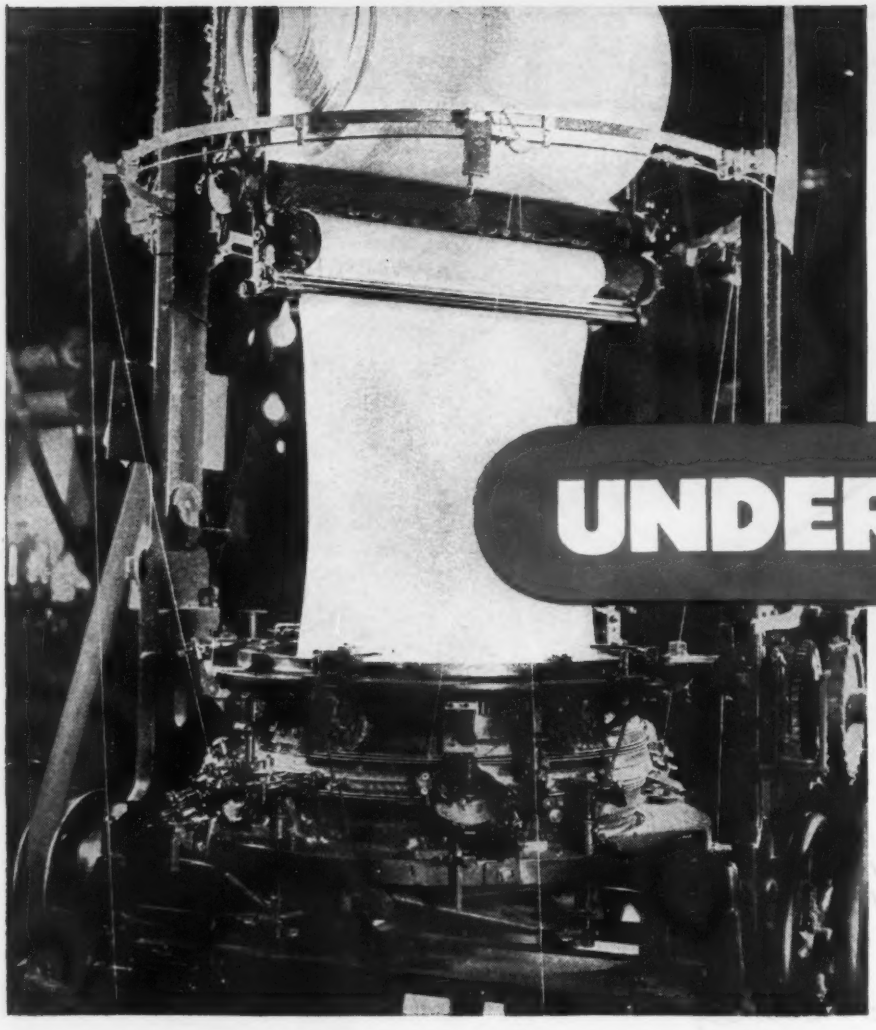

UNDERSHIRTS by the mile

DURING his initial training in the United States, G.I. Joe receives four sleeveless cotton undershirts — requires even more when he goes overseas. With about 12 million men under arms, literally miles of undershirt material must be produced every single month.

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TABLE OF CONTENTS

MILL DEPARTMENTS — *Classified According to Reader Interest* — FIBER DIVISIONS

YARN PRODUCTION	WEAVING	KNITTING	FINISHING	ENGINEERING	MISCELLANEOUS	FEATURE ARTICLES	PAGE	COTTON	SYNTHETICS	WOOL	MISCELLANEOUS
Y	W	K	F	E	M	Let the Spotlight GLEAM (Editorial)	4	C	S	W	M
Y	W	K	F	E	M	Unique Organization Handles PROBLEMS	101	C	S	W	M
		K		E		CENTENNIAL of American Circular Knit	104	C	S	W	M
		K				SEAMLESS Hose Faces Transition	105	C	S	W	M
		K				FULL-FASHIONED Problems Multiply	106	C	S		
		K				UNDERWEAR Expects Gradual Change	107	C	S	W	
		K				Circular OUTERWEAR'S Bright Future	107	C	S	W	
		K				WARP-KNITTING Reaches Turning Point	108	C	S	W	M
		K				COMBINATION Knitting Is Versatile	108	C	S	W	M
		K		E		Revitalize LIGHTING in Your Mill	109	C	S	W	M
		K		E		Check AIR-CONDITIONING for Knitting	111	C	S	W	M
Y						Cotton SPINNERS, Look to Fundamentals	113	C			
	W					DESIGNING Granite and Crepe Weaves	116			W	
Y						CARD-ROOM Control Begins with Staple	118	C			
				E		BEARINGS—Keep 'Em Running	120	C	S	W	M
Y	W			E		Handling Differs for MONOFILAMENTS	123		S		
Y			F		M	Dan River Reports on RESEARCH	129	C	S		
			F			LIGHT-PRINTING on Cloth	133	C	S	W	M
	W					Leno War-Weaves Easily RECONVERTED	137	C			
			F			Solvent Solutions for MILDEWPROOFING	141	C			
Y	W	K	F	E	M	STOCKROOM Control Should Pay	143	C	S	W	M
Y	W			E		Speeds Study of Textile FIRE Hazards	145	C	S	W	M
Y	W	K	F	E	M	Movies and Slide Films for TRAINING	147	C	S	W	M
Y	W	K	F		M	WPB Explains NEED for M-388	149	C	S	W	M
Y	W		F	E		ABRASION Resistance of Rayon Linings	218		S		
Y	W		F			Bemis L-M Gets RESULTS	220	C			
						KINKS AND SHORT-CUTS					
	W			E		Compensator Rod Prevents KNOCK OFFS	158	C	S	W	M
		K		E		KNIT CLOTH Removed by Power Machine	160	C	S	W	M
Y						Pipe Used as CLEANER HOLDER	160			W	
Y				E		Mercury Switch Cures CONTACT Troubles	160	C	S	W	
	W					Wrappers Keep PIECING ENDS Clean	160		S		
				E		Brush for CLEANING Fluorescent Lights	162	C	S	W	M
	W					Picker-Rod BUSHING Compensates Wear	162	C	S	W	M
			F		M	EMPTY DRUMS Safely	162	C	S	W	M
	W					FEELER Composed of Discarded Parts	162	C		W	M
	W					Only One Hand to Remove HARNESS Hooks	164	C	S	W	M
	W					SALVAGING Broken Harness-Mount Wires	164	C	S	W	M
	W					Tray Prevents DIRT Falling on Warp	164	C	S	W	M
Y	W	K		E		Small Parts CONTAINER	164	C	S	W	M
						IN OTHER DEPARTMENTS					
	W					LOOM Attachments	151	C			
			F			Ball-Bearing-Mounted Cloth EXPANDER	152	C	S	W	
			F	E		Recirculating AIR-HEATER	154	C	S	W	
				E		Prefabricated BOILER-CONTROL Panel	154	C	S	W	M
Y	W	K		E	M	Cluster-Type HUMIDIFIER	154	C	S	W	M
Y	W	K	F	E	M	New Variable-Speed DRIVE	154	C	S	W	M
Y						Fiber Distribution Key to Good YARN	170	C			
Y					M	COTTON with Extremely High Strength	172	C	S		
	W					Former British Weaver COMPARES	172	C	S		
	W					THREAD GUIDE Should Not Cause Trouble	174	C	S		
	W					English Textile Worker RETURNS at 84	174	C	S	W	M
Y					M	Omission in POLARIZED LIGHT Article	176	C			
Y	W	K	F	E	M	Asking "WHY?" Leads to Improvements	176	C	S	W	M
Y						Machine Assignments in ROVING	180	C			
			F			ANALYZING Finished Fabrics	182	C	S		

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DEPARTMENTS

Book Reviews 168
Boosting Employees' Morale...216
Editorial 4
Free For the Asking.....222
Kinks and Short-Cuts.....158
Loomfixers' Manual 212
Mill Maintenance 156
New Dyes and Chemicals.....156
News About Men.....240
News About Mills.....234
News About Suppliers.....226
News of the Month.....208
Old Man Carelessness.....168
Pete and Bill.....167
Questions and Answers.....180
Round Table 170
Textile Equipment News.....151

THE Long-Range View

Let the Spotlights Gleam

The climax of the European war and the currently deafening crescendo of the Pacific war, both heralding the approach of the end of the world conflict, find the textile industry not only in the tightest war-production squeeze it has thus far experienced, but also caught—and not too flatteringly—in the public spotlight. Or so the newspapers imply.

But the textile industry itself is not primarily to blame for the fact that clothing prices have been leading the inflation parade. The upgrading of cotton and rayon finishes and garments has necessarily been mostly the work of converters and cutters. If woolen and worsted manufacturers have concentrated an unusually high percentage of their output in the better-grade lines, it is largely because they have been following the wishes of the pocket-heavy consumer. Retail establishments—particularly mail-order houses with wide ranges of qualities—can testify that some low-end wool merchandise has gone begging.

The unprecedented and eleventh-hour getting together of WPB and OPA to produce their respective, although interlocked, M-388 and MAP (maximum average price) plans, shakes certain segments of the industry because of the suddenness of the move and because it is obvious that, if many of the practical considerations overlooked by government officials are to be given adequate attention by qualified industrialists, action must be taken quickly. In the smoke of speedy action, the public sees a recalcitrant industry at bay.

In forming this impression, the public forgets that its fear of a garment scarcity has led it to ask for longer-lasting merchandise; that the resulting decrease in wardrobe replacement saves manpower in industry and offsets the inflationary effect of higher prices; and that cotton and rayon as substitutes for wool are scarce, while virgin wool itself is in surplus. The public needs to be informed that the difficult conversion of quality wool mills and garment manufacturers to the mass-production of low-end goods might actually decrease the civilian's supply of clothing, rather than increase it.

The newspapers have also seen fit to raise questions with respect to the labor-draft experiment in New Bedford, when, for apparently the first time, the War Manpower Commission endeavored to move some workers from one type of plant to a currently more essential type. These plants happened to be textile mills. They could just as well have been units of any other industry, and the result would in all probability have been the same.

Almost simultaneously with the announcement by the National War Labor Board that textile workers in 54 cotton and rayon plants are entitled to a 55-cents-per-hour minimum wage and an increase of five cents per hour comes the announcement from Emil Rieve that the involved 50,000 members of his Textile Workers Union are now released from the no-strike pledge.

Then, as just a little extra spice for the industry's critics, the newly appointed executive director of one of its largest associations makes himself persona non grata in certain important Washington offices by unintentionally publicizing his interpretations of off-the-record statements made by government officials.

And now comes the suggestion that tariffs should be reduced 50%—a proposal which is bound to bring publicly expressed objections from wool men.

Some of these headaches may end soon after the termination of the war, but not many of them. The inflationary rise which immediately followed World War I was almost as great as that which occurred during the war itself, and it will not be until production begins to equal the demand of American civilians that the present inflation danger will be over. Certainly the wage disputes and the tariff controversy will run on.

We of the industry must take these problems and do our best with them—frankly and openly defending our rights. It is the national duty of every industrialist to interpret and warn against the harmful effects he foresees in any governmental action. Few men outside an affected industry are qualified to do it, and fewer still could be counted on even to try. It is only fair, however, that the government should expect the industry leaders to submit alternative solutions to the problems facing the nation.

The spotlight which strikes those who head up such efforts is no more pitiless than that which strikes the various officials in Washington with whom they deal. Both spotlights serve an important function in keeping the public—with whom all ultimate decisions rest—informed. To shrink from either spotlight is to render no service to America or to the democratic way of life.

Edwin D. Fowle

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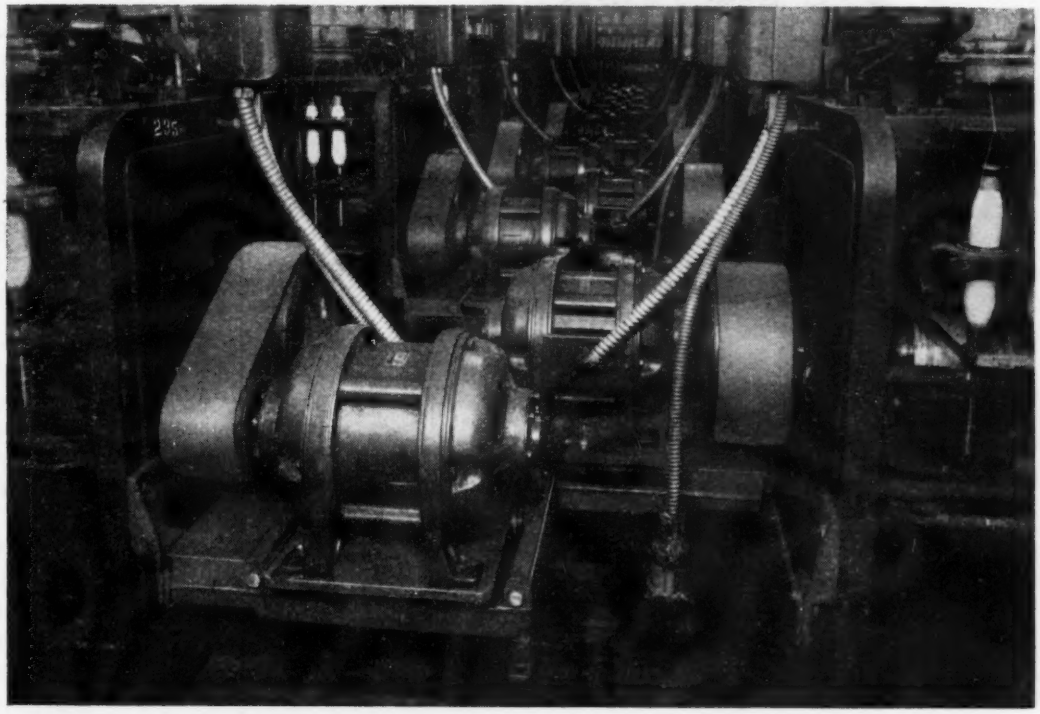

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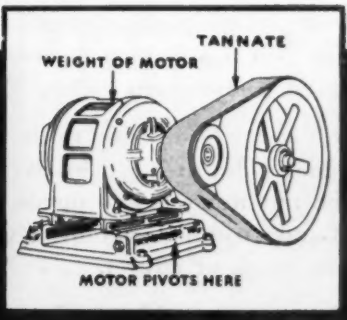

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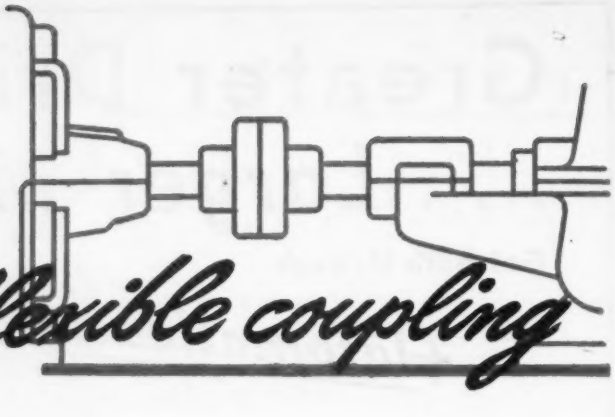

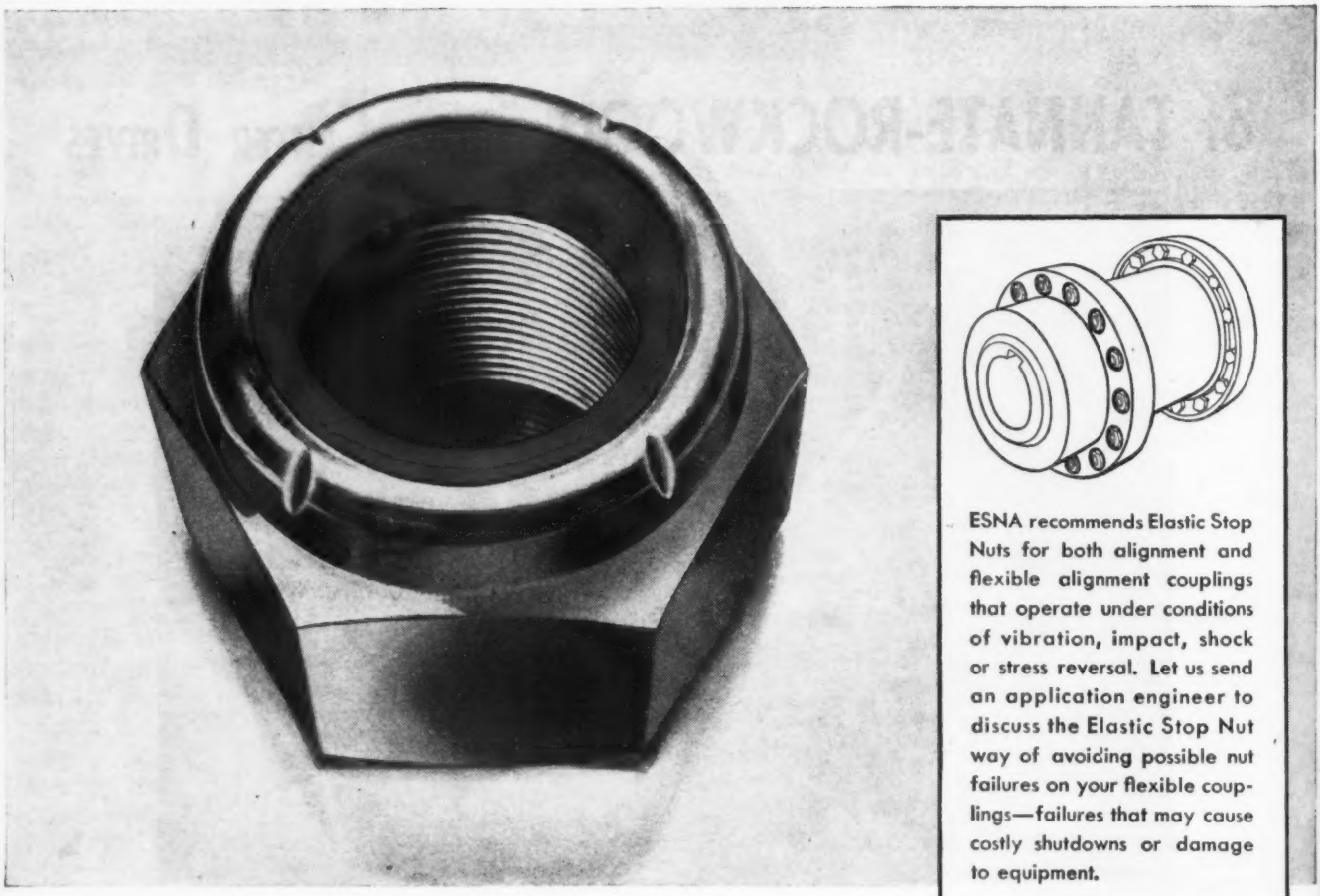

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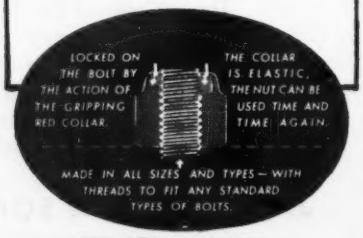
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The Elastic Stop Nut uses its head. It has what it takes to stay put in a coupling, no matter how tough the operating conditions.

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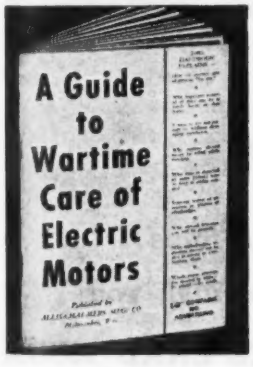

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SYMPTOMS YOU CAN SEE

Symptom	Possible Causes	Cure
1. Excessive sparking or flashing at brushes. Blackened commutator.	Rough commutator.	Sand or turn down, depending upon depth of surface roughness.
	Low bar on commutator.	Grind or turn down balance of commutator.
	High bar on commutator.	If extreme, lower with mallet, tightening clamping ring. Grind true.
	Brushes too short.	Replace with harder grade—if worn too soon . . . and not by rough commutator.
	Shorted armature winding.	Test for short—after removing metallic contact between commutator bars. Repair.
2. Intermittent sparking at brushes.	Open armature winding.	Locate and replace bad coil—or repair defective joint.
3. Motor won't start.	Usually line trouble.	Correct. Check source of power supply.
	Load too heavy. See if motor runs without load.	Reduce load—or replace motor with unit of greater capacity.

SYMPTOMS YOU CAN HEAR

4. Excessive hum.	Uneven air gap. Measure with feelers.	Replace bearings—before introduction of scraping noise indicates rotor is rubbing.
	Unbalanced rotor. Check on parallel bars.	Balance with solder on band—or weight attached by cap screw and lock washer.
5. Regular clicking.	Matter in air gap.	Take out rotor; remove matter.
6. Rapid knocking	Misalignment.	Realign set until knocking disappears.
7. Brush "chatter."	Extreme vibration.	See item 10, below.

SYMPTOMS YOU CAN FEEL

8. Vibration.	Misalignment.	Realign set.
	Vibration in driven machine.	Eliminate source in machine, if possible. Or a flexible belt drive may be in order.
9. Motor overheating. (Check with thermometer—don't depend on hand).	Overload. Measure load; compare with nameplate rating.	Check for excessive friction in motor, drive or machine. Reduce load, or replace motor with greater capacity unit.
	Dirt in motor. Check flow of air.	Blow out motor. Use solvent on wound section if necessary.
	Rotor rubs stator.	Replace bearings.

A 1638

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When you do need new motors, look into the strength, solidity and all-around protection of the new "Safety Circle"—protected top, sides, ends and bottom.

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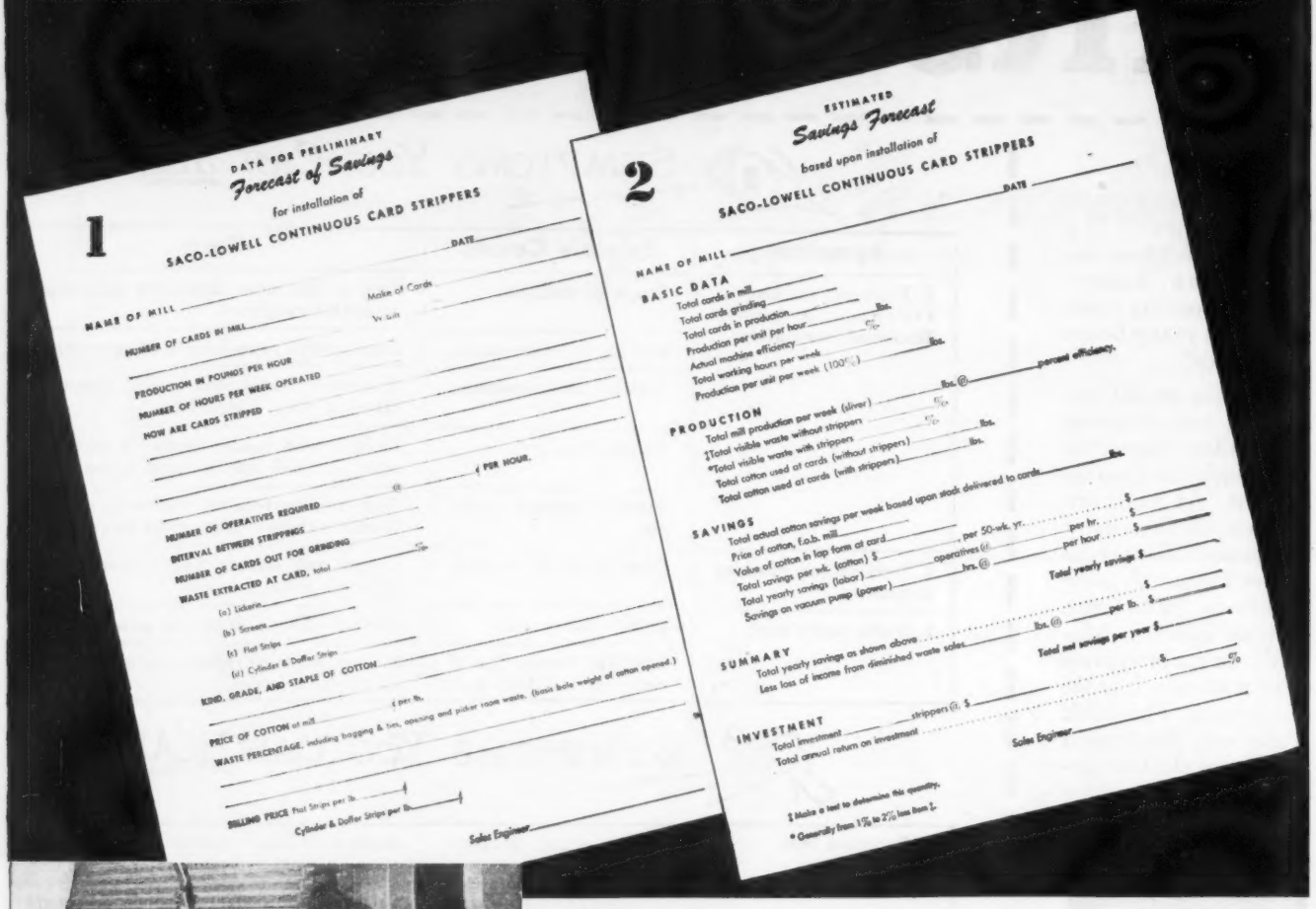
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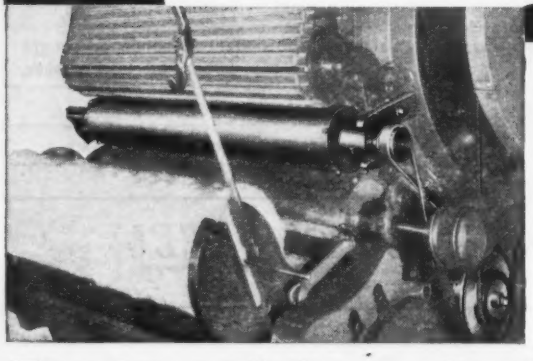
NUMBER OF HOURS PER WEEK OPERATED
HOW ARE CARDS STRIPPED
NUMBER OF OPERATIVES REQUIRED
¢ PER HOUR.
INTERVAL BETWEEN STRIPPINGS
NUMBER OF CARDS OUT FOR GRINDING
WASTE EXTRACTED AT CARD, total
(a) Licker-in
(b) Screens
(c) Flat Strips
(d) Cylinder & Doffer Strips
KIND, GRADE, AND STAPLE OF COTTON
PRICE OF COTTON at mill ¢ per lb.
WASTE PERCENTAGE, including bagging & ties, opening and picker room waste. (Basis bale weight of cotton opened.)
SELLING PRICE Flat Strips per lb. ¢
Cylinder & Doffer Strips per lb. ¢
Sales Engineer
2
ESTIMATED
Savings Forecast
based upon installation of
SACO-LOWELL CONTINUOUS CARD STRIPPERS
DATE
NAME OF MILL
BASIC DATA
Total cards in mill
Total cards grinding
Total cards in production
Production per unit per hour lbs.
Actual machine efficiency %
Total working hours per week
Production per unit per week (100%) lbs.
PRODUCTION
Total mill production per week (sliver) lbs. @ percent efficiency.
‡Total visible waste with strippers %
*Total visible waste without strippers %
Total cotton used at cards (without strippers) lbs.
Total cotton used at cards (with strippers) lbs.
Total cotton used at cards based upon stock delivered to cards lbs.
SAVINGS
Total actual cotton savings per week based upon stock delivered to cards $
Price of cotton, f.o.b. mill ¢
Value of cotton in lap form at card ¢
Total savings per wk. (cotton) $ per 50-wk. yr. $
Total savings per wk. (labor) operatives @ per hr. $
Total yearly savings (labor) hrs. @ per hour $
Savings on vacuum pump (power) Total yearly savings $
SUMMARY
Total yearly savings as shown above $
Less loss of income from diminished waste sales lbs. @ per lb. $
Total net savings per year $
INVESTMENT
Total investment strippers @ $ $
Total annual return on investment %
Sales Engineer
‡ Make a test to determine this quantity.
* Generally from 1% to 2% less than ‡.



1... *fill out this form to obtain the basic data*

2... *these are the facts we will furnish you*

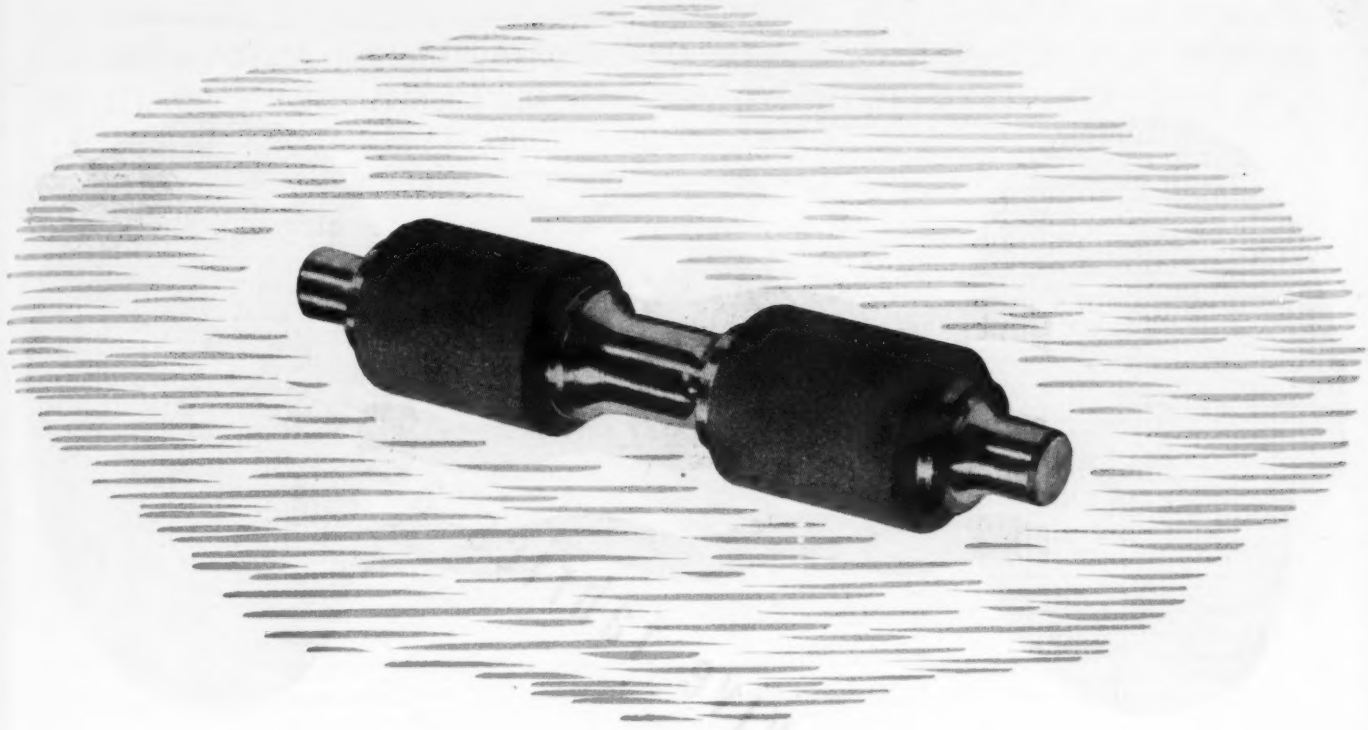
These forms will show you how **PROFITS CAN BE MADE IN THE CARD ROOM**

The Saco-Lowell Continuous Card Stripper is a saver of TIME, MONEY and COTTON . . . a fact that can be proved to you even before a single investment is made on your part. All we need are a few details . . . the answers to twelve simple questions . . . as shown in Form #1 above. From the facts which you will furnish us, we will prepare an "Estimated Savings Forecast," giving you the data as detailed in Form #2.

With this report before you . . . you will have complete facts as to just what the Saco-Lowell Continuous Card Stripper can do in your mill. Our report will show you how production can be increased; how cylinder stripping losses can be eliminated and how tangible savings in operating costs, improved production and cotton saved can create an annual return on your investment as much as 75 to 100 per cent.

Aren't these facts worthwhile having? Write for copies of Form #1 . . . or rather than wait, copy the specifications from the above form on your letterhead, fill it out, and send it to our nearest office. Your request will receive immediate attention and our engineers' report will be returned to you promptly.

SACO-LOWELL SHOPS BOSTON, MASSACHUSETTS
GREENVILLE, CHARLOTTE, ATLANTA



This improved synthetic cot gives you LONGER SPINNING LIFE

Here's what we mean when we say that Armstrong's Cork-and-Synthetic-Rubber Accotex Cots give you "longer spinning life"!

These Accotex Cots are made from a specially compounded synthetic rubber containing cork. The cork content helps Accotex Cots to retain their good grip longer than any "straight" synthetic cot. It is this combination that gives you good drafting over a longer period . . . eliminates frequent rebuffing.

In many mills, Accotex Cots have been in continuous operation—without rebuffing—for more than two years. Yet they are still producing high quality yarn!

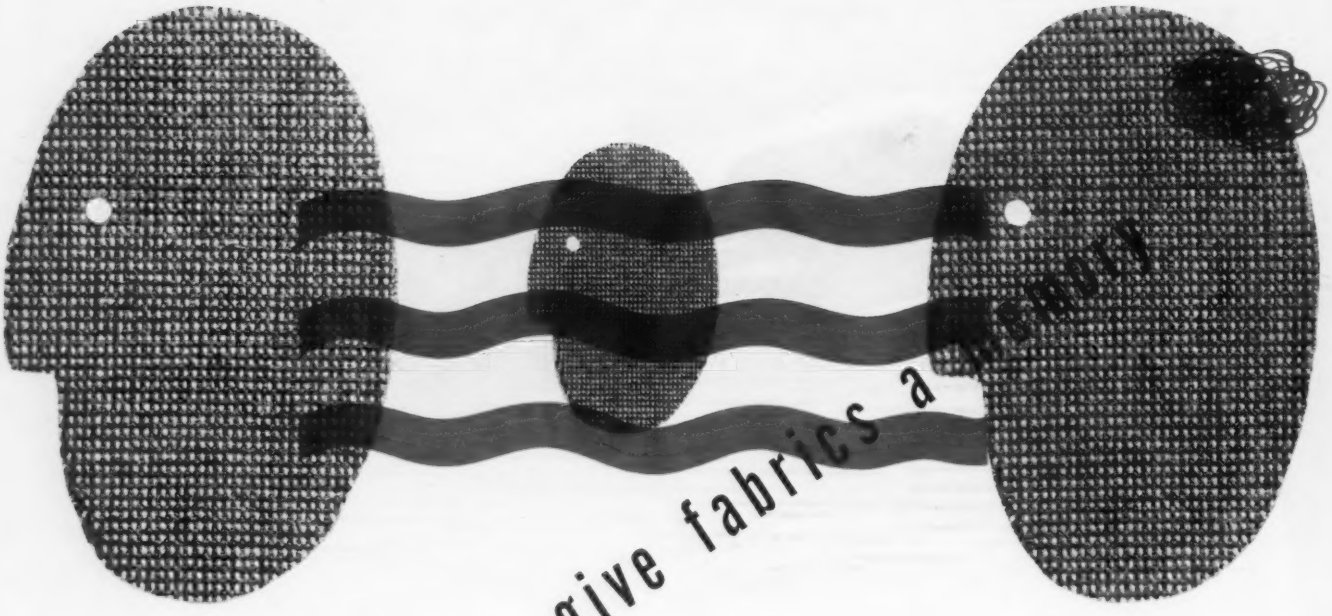
But Accotex Cots offer you *more* than long spinning life. For the other plus advantages, check over the list on the right. If you would like to prove these advantages in your own mill, get in touch with your Armstrong representative. He'll arrange for you to make your own mill tests. Or write Armstrong Cork Company, Textile Products Dept., 8304 Arch St., Lancaster, Pa.

PLUS

1. **REDUCED EYEBROWING**—The resistance to slicking minimizes eyebrowing.
2. **REDUCED LAPPING**—Accotex Cots have little affinity for textile fibers and are non-sweating.
3. **GOOD START-UP**—Accotex Cots are non-thermoplastic and resist flattening.
4. **SOLVENT RESISTANCE**—Accotex Cots are not affected by oil, water, dyes, or textile solvents.
5. **SEAMLESS CONSTRUCTION**—Accotex Cots have no seams—can't break open in service.
6. **QUICK ASSEMBLY** — Accotex Cots are ready glued.

ARMSTRONG'S ACCOTEX COTS

CORK COTS • ACCOTEX APRONS



How to give fabrics a memory

The ability of a fabric to return to its original size, appearance, and general characteristics after washing, wetting, stretching, creasing, etc., is often referred to as its *memory*.

Some fabrics have practically no memory . . . others have some . . . but others, specially treated with Monsanto's Resloom, have almost perfect memory.

The principal reason for this is that in Reslooming a fabric, the resin is carried into the core of the individual fibres, not deposited on the surface. Resloomed fibres stretch readily, but they tend to resume their original position when tension is released.

If a fabric is Resloomed flat, it tends to remain flat; it will tend to hold the length and width at which it was treated; if it is creased, treated, then rumpled, it will tend to return to its original smooth state . . . all in spite of showers, washings or general usage. Resloomed garments or blankets have a tendency to return to the fullness and thickness they possessed when impregnated . . . retaining the dead air spaces in their bulk and thereby retaining their insulating properties.

Giving fabrics shrinkage control and stability . . . a memory . . . is just one of the many jobs in textiles with which Monsanto's research laboratories are busy today. You're going to hear more about (1) Syton for slip-proofing and delustering, (2) vinyl butyral coatings, (3) developments for water-repellency, and, (4) protection against wear, mildew, and flame. Keep an eye on Monsanto for the latest news in textile chemicals. MONSANTO CHEMICAL COMPANY, Textile Technical Service, Everett Station, Boston 49, Massachusetts.

MONSANTO
CHEMICALS AND PLASTICS

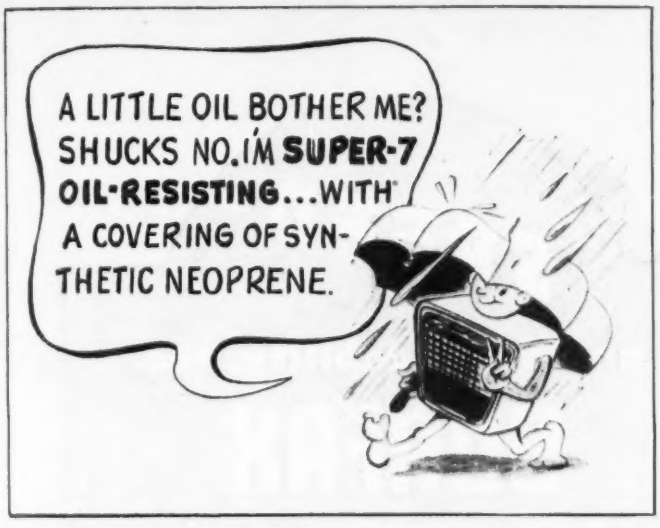
The Textile
SERVING A INDUSTRY . . .
WHICH SERVES MANKIND

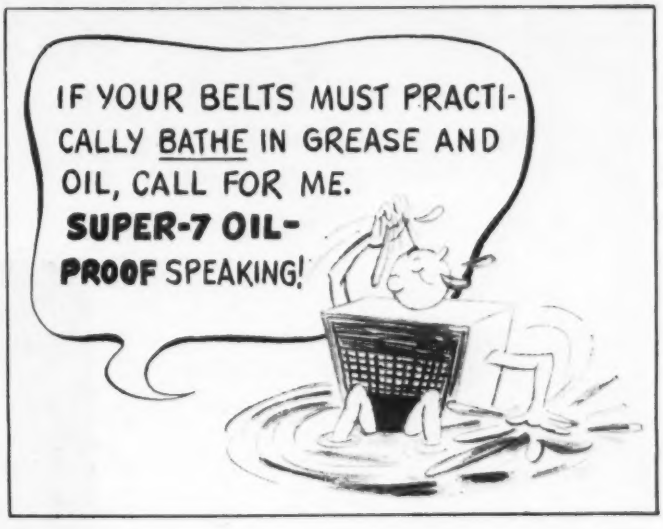
I'M SUPER-7-STEEL--NEWEST AND STRONGEST MEMBER OF TEXROPE'S V-BELT FAMILY. EXTRA-HEAVY LOADS, FIXED CENTER DISTANCES ARE WHERE I SHINE.

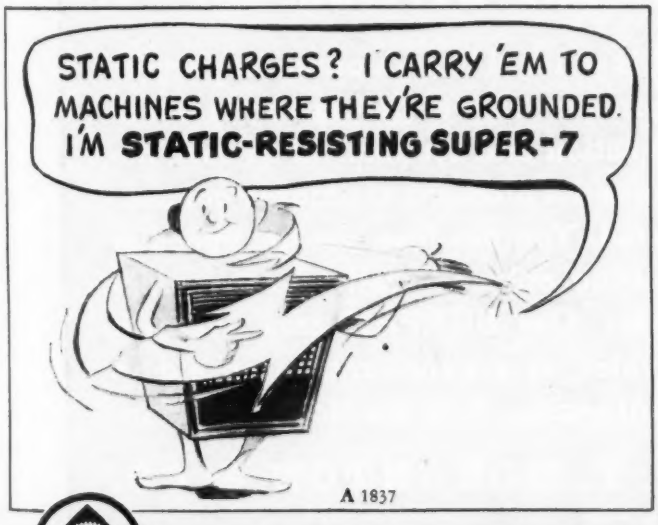
MEET ALLIS-CHALMERS FAMOUS

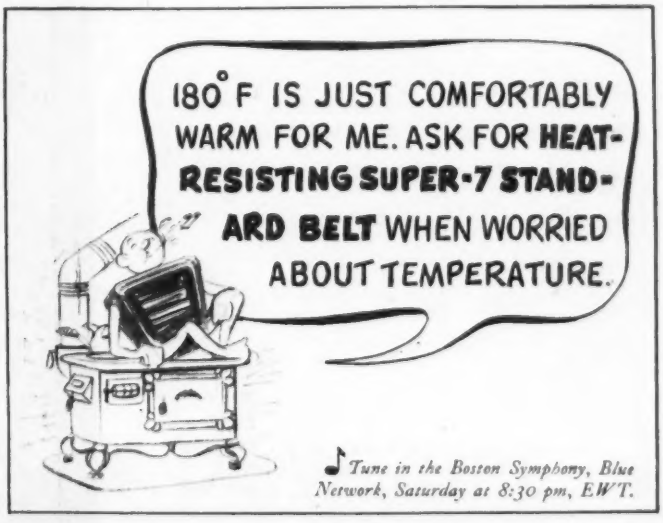
V-Belt Family!

To lick each of your different belt problems, you'll be sure of finding the right belt in America's widest V-belt line...Allis-Chalmers' Texrope!








180° F IS JUST COMFORTABLY WARM FOR ME. ASK FOR HEAT-RESISTING SUPER-7 STANDARD BELT WHEN WORRIED ABOUT TEMPERATURE.
♪ Tune in the Boston Symphony, Blue Network, Saturday at 8:30 pm, EWT.

IT PAYS TO MAKE ALLIS-CHALMERS YOUR

V-BELT DRIVE HEADQUARTERS

Texrope Super-7 V-Belts result from the cooperative research of two great companies—Allis-Chalmers and B. F. Goodrich—and are sold exclusively by A-C.

SPEED-

and dependability, too

SURFAX

FOR WETTING OUT

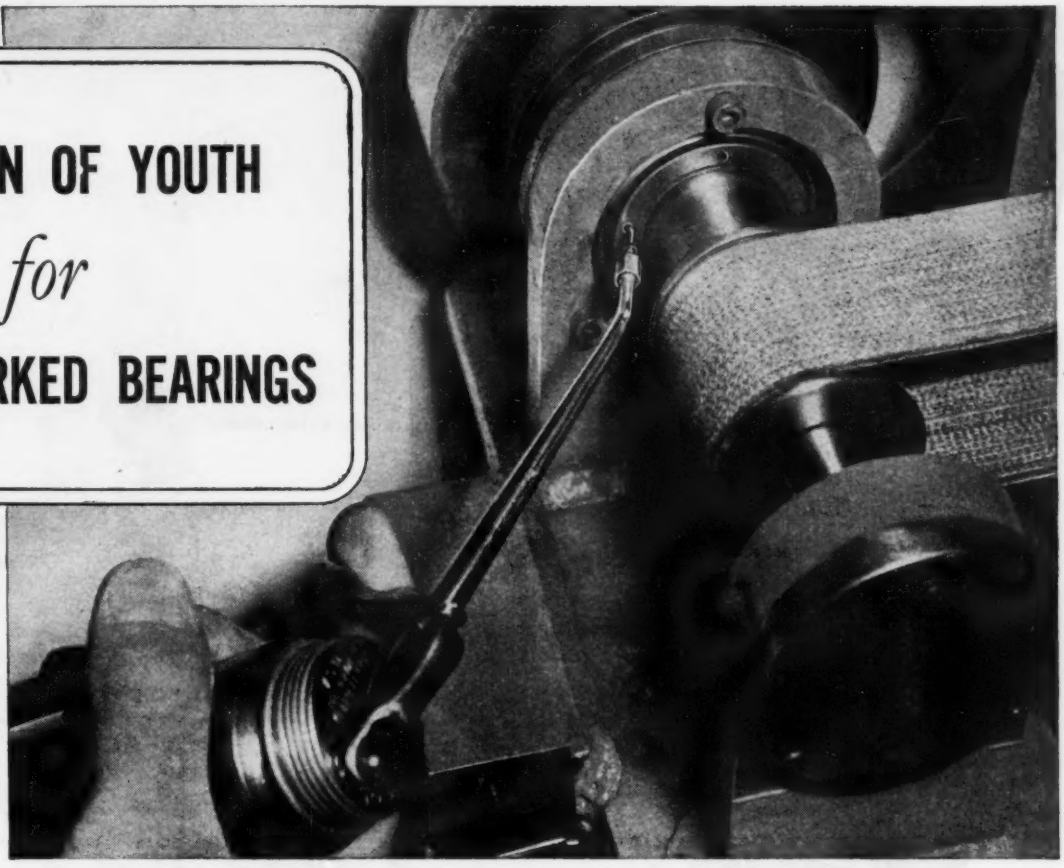
This series of Houghton surface-active agents for all wet processing is fast in its action and economical in cost, because the products are highly concentrated. You use less, yet get speedier wetting-out and wetting-back properties. Use SURFAX as a dye-bath leveler, as a penetrant, as an aid in Sanforizing. Ask the Houghton Man.

E. F. HOUGHTON & CO.

Charlotte · PHILADELPHIA · Chicago

Offices in all principal cities in the United States and Canada

FOUNTAIN OF YOUTH
for
HARD WORKED BEARINGS



The self-sealed ball bearing and its many advantages are thoroughly proved. Since New Departure originated it 28 years ago, over 80 millions have been produced — many of them for electric motors and textile machines.

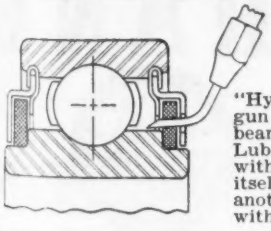
But, the extra long life required in some machinery, and the adverse conditions under which bearings and their lubricants must frequently operate, calls for something new — which New Departure will soon supply.

It is an injection system applied to an improved self-sealed bearing whereby fresh lubricant can quickly revitalize the old, thus vastly increasing its utility and particularly when conditions are unusually severe.

This method does not require removal of the bearing from the housing. Neither does it involve the use of nipples, grease passages, plugs or removable seals.

Ask for pamphlet IB describing this "new departure" in detail. Availability of the sizes you will require for your new machines determined upon request.

How the New Departure Injection System Works

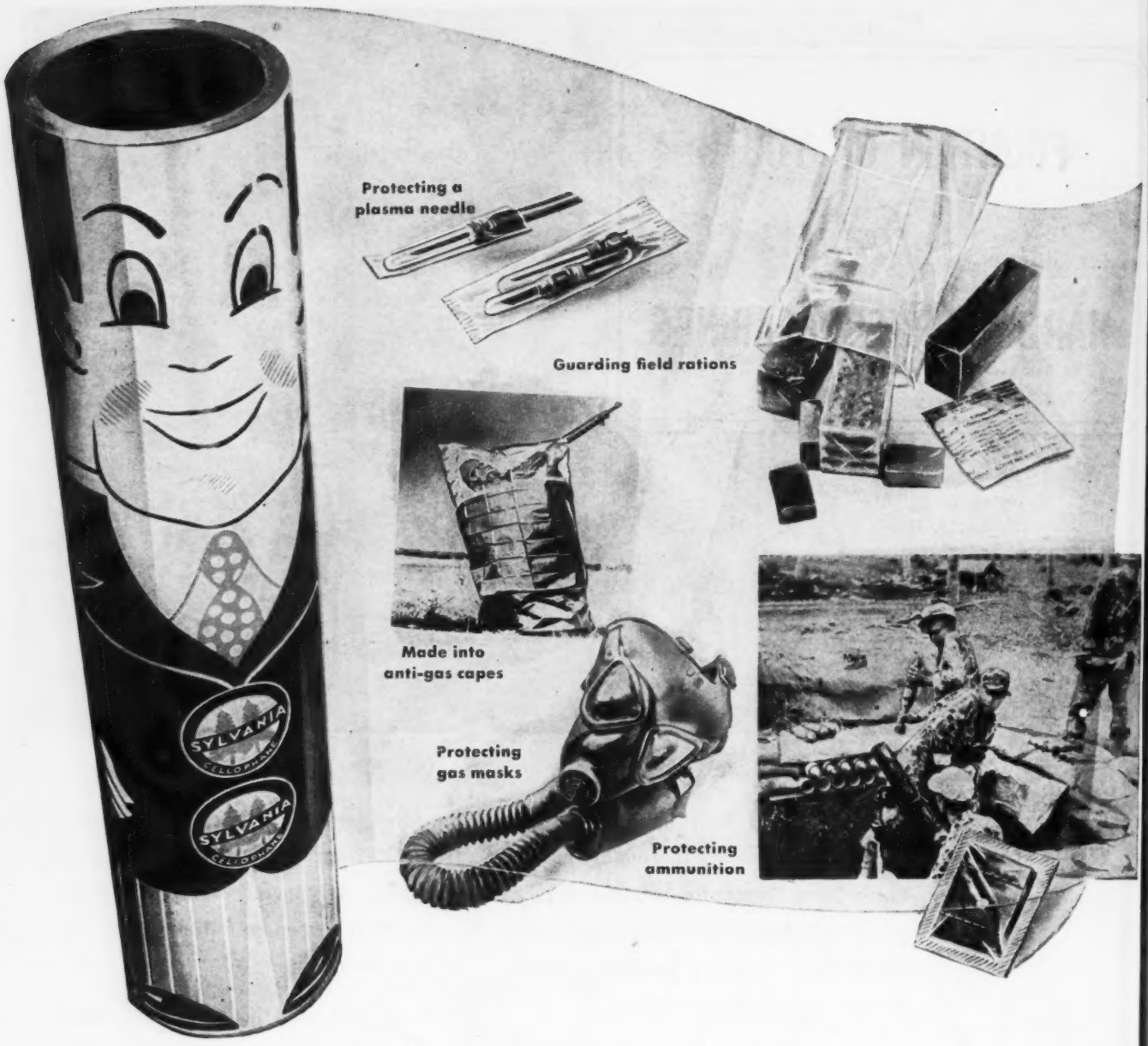


"Hypodermic" nozzle on grease gun is inserted through hole in bearing and penetrates seal. Lubricant injected, needle is withdrawn. Hole in seal closes itself and the bearing starts another long period of service without attention.

NEW DEPARTURE
BALL BEARINGS 3360

New Departure • Division of General Motors • Bristol, Connecticut

1945



Mr. Cellophane Does His Bit!

WHEN WAR CAME, Mr. Cellophane was one of the first to join up. To date he has seen service on all the fighting fronts . . . doing his bit in protecting the food supplies and equipment of our fighting men.

In many cases *special* cellophanes had to be developed by Sylvania to meet packaging conditions never experienced in producing for civilian use. The sketches above show the examples of only a few of these packaging advances. Many, many more are doing equally important jobs all over the world . . . and still more are in the process of development.

Experience alone enables Sylvania to meet the ever increasing requirements of our armed forces. Only when they are victorious can we turn to our peacetime job of supplying the postwar world with the *better* cellophanes of tomorrow.

SYLVANIA CELLOPHANE

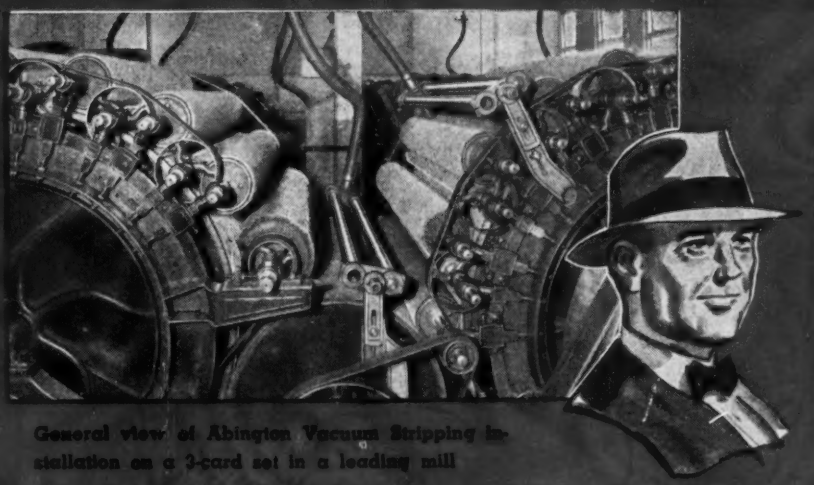
Made only by SYLVANIA INDUSTRIAL Corporation

Manufacturers of cellophane and other cellulose products since 1929

General Sales Office: 122 E. 42nd St., New York 17, N. Y. ★ *Plant and Principal Office:* Fredericksburg, Va.

SYLVANIA CELLOPHANE ARMY (E) NAVY

•Reg. Trade Mark



General view of Abington Vacuum Stripping installation on a 3-card set in a leading mill

"It saves us 6 men on card stripping!"

ABINGTON VACUUM STRIPPING for WOOLEN and WORSTED CARDS

STRIPPING COST REDUCED

Abington Vacuum Stripping saves 60% to 90% of stripping cost through its automatic features. Such reports as: "Four men replacing 12 on stripping," are common from users.

PRODUCTION INCREASED

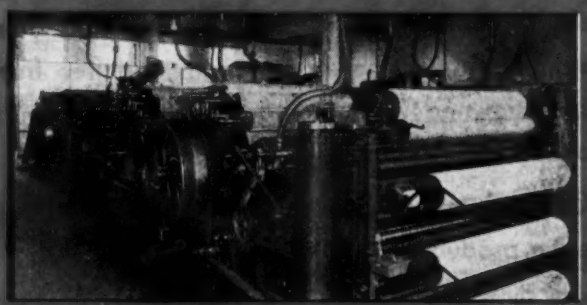
Down time for stripping is reduced often 90%. Often the increased production equals an extra set of cards. 45 minutes make a color change, instead of 3 to 4 hours.

PRODUCT QUALITY IMPROVED

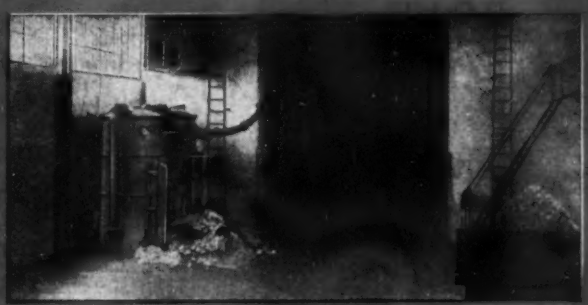
Abington Vacuum Stripping assures thorough removal of embedded dirt and fibre; quickly performs extra stripping of cylinders and doffers if desired; helps preserve sharpness and alignment of clothing wires —all of which definitely enhance quality.

HIGHLY ADVANTAGEOUS IN BOTH LARGE AND SMALL MILLS

REQUEST STRIPPER CATALOG



Showing woolen card cylinder and doffer equipped with Abington Vacuum Stripper, which feeds across automatically.



All strips are vacuum delivered to a receiver located at a central point convenient for re-handling.

ABINGTON TEXTILE MACHINERY WORKS

Vacuum Card Strippers • Yarn Dyeing Systems • Weaver's Knotters

ABINGTON, MASS.—OFFICES AT BOSTON, MASS. & CHARLOTTE, N. C.

... that's *Tufferized* Card Clothing

Just as the barber's experienced touch assures a clean and sharp job on a wiry beard, our exclusive Tufferizing Process is your guarantee of finest steel wires cut even in length and free from wire burrs . . . square-crowned wires that are accurately formed and accurately placed in the famous Tuffer foundation!

Tuffer Card Clothing means easier stripping, less grinding, longer life and greater production!

Card Clothing for Woolen, Worsted, Cotton, Asbestos, and Silk Cards—Napper Clothing, Brush Clothing, Strickles, Emery Fillets. Top Flats Recovered and extra sets loaned at all plants—Lickerins and Garnett Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant—Midgley Patented Hand Stripping Cards, Howard's Special Hand Stripping Cards and Inserted-Eye and Regular Wire Heddles.

TUFFER CARD CLOTHING

HOWARD BROS. MFG. CO.

WORCESTER, MASSACHUSETTS

Southern Plants: Atlanta, Ga., Gastonia, N. C. **Branch Offices:** Philadelphia, Austin **Canadian Agents:** Colwool Accessories, Ltd., Toronto 2

SANDOZ PRESENTS *The color achievement of the month*

Sculptured Rose BY GULISTAN

The sculptured effect of Karagheusian's Renaissance Weave enhances the romantic character of this amethyst rose carpet by the "Makers of Gulistan".

As the influence of color becomes more and more dominant in carpet styles, leaders like Karagheusian turn to firms like Sandoz for innovations in dyes to supplement the inventive weaver's art.

Sandoz, for instance, has developed such patented colors as Alizarine Light Blue 4GL, recognized as the fastest-to-light acid blue on the market, Azo Rubinole 3 GP and Alizarine Light Violet 2 RC (Pat.), examples of a complete line of fast-to-light acid colors.

For your color achievements, investigate — critically — Sandoz' skill in providing acid, chrome and direct dyes for your particular requirements, as well as auxiliary chemicals for all natural and synthetic fibres. In auxiliaries, for instance, Sandoz' LEVANA helps preserve tensile strength and appearance when dyeing any woolen fabric.

Sandoz application laboratories are at your service in New York, Boston, Philadelphia, Charlotte, Los Angeles, Toronto, with stocks in those cities. Other Sandoz branches: in Chicago, Paterson and Providence.

Look for next month's "Color Achievement", featuring the work of another style leader among Sandoz customers.

SANDOZ CHEMICAL WORKS, INC., 61 VAN DAM STREET, NEW YORK 13, N.Y.

SANDOZ *thinks ahead with textiles*

SANDOZ

As long as free delivery of inspected yarn—without waste —is important to knitters:

NOTHING CAN REPLACE THE UNIVERSAL CONE

Photograph through courtesy of Industrial Rayon Corporation

The shape of the cone allows yarn to deliver freely without dragging over the nose end. The lay of the yarn avoids underwinds, stitches or cobwebs which cause plucks. For those reasons alone, the Universal Cone would be considered the ideal form in which to send rayon yarn to the knitting machines.

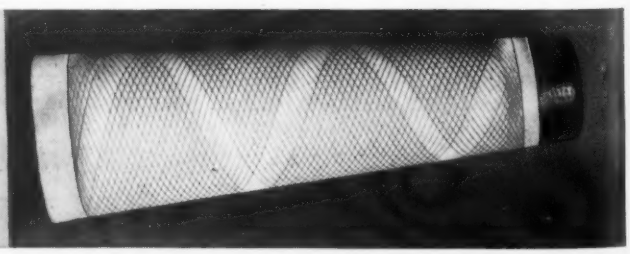
But there are other advantages knitters consider important. Yarn on Universal Cones has been inspected on the "precision" winding machine. Its compact shape makes a good shipping package—no broken noses and tangled yarn. And it reduces waste because every last inch of yarn goes into the fabric.

Universal Winding Company, Providence, Boston, Philadelphia, Utica, Charlotte, Atlanta. See 10-page catalog in TEXTILE WORLD YEARBOOK.

LEESONA

Reg. U. S. Pat. Off.

MORE THAN 90% OF ALL SYNTHETIC FILAMENT YARN ON CONES IS WOUND ON THE UNIVERSAL "PRECISION" WINDING MACHINE



PLASTIC PARTS... Post-Formed

A New Production Technique

Recently developed methods of post-forming fully cured Formica laminated plastic sheets have adapted the material for very much wider use in a great many applications that were formerly thought impractical.

In this process the sheets are heated, and formed quickly with inexpensive wooden or Pregwood dies into many curved shapes.

Previously to secure such shapes it was thought necessary to mold the material in curing with the use of very elaborate and expensive steel molds—which were impractical for any but a few large volume applications.

This shaping method provides a very light (specific gravity 1.35) material, that is strong, stable in dimensions, inert chemically and therefore possessing a finish that is free from corrosion and long of life.

Formica engineers will be glad to tell you the story.

FORMICA

THE FORMICA INSULATION COMPANY, 4668 SPRING GROVE AVENUE, CINCINNATI 32, OHIO

ABBOTT AUTOMATIC WINDERS

Winding Average hourly production per operator 900 to 1000 bobbins per hour

2-oz.	Bobbin	.....	112 lb. hr.
3-oz.	"	.....	169 " "
4-oz.	"	.....	224 " "
5-oz.	"	.....	280 " "
6-oz.	"	.....	338 " "
7-oz.	"	.....	380 " "
8-oz.	"	.....	448 " "

These production figures are being obtained in mills throughout the United States and Canada, and show the lowest direct labor cost of winding.

In addition there is a great saving in floor labor to supply the winders with spinning bobbins and remove wound cones or cheeses.

Supply bobbins are dumped by the doffers into a box at floor level. A lever is pushed and the box is lifted and dumped automatically into a big hopper. These are large enough to eliminate any other storage of yarn. There is no trucking of yarn up and down winder alleys and distributing it along the machines. It is all fed in at one point. Similarly cones are all doffed at end of winder, and move directly into warper creels or to twisters or automatic quillers.

ABBOTT MACHINE COMPANY

WILTON, N. H.

Southern Representative, Mr. L. S. Ligon, Greenville, S. C.

Your Guide to TRUSTWORTHY VALVES

Jenkins Bros

Look for the famous JENKINS DIAMOND-SIGNATURE TRADE MARK *and be sure of Extra Value in Valves*

For more than 80 years, the familiar Jenkins Diamond Trade Mark has been the symbol of supreme quality in valves.

It is the mark that distinguishes valves of extra value . . . value assured by the superior materials that go into them, by the resourceful men who make them, by the integrity that has become synonymous with the name Jenkins.

Valves worthy of the universal trust the Jenkins Diamond has earned are the only valves that will ever bear this mark. It is our pledge to you of the finest quality it is possible to provide . . . now, and as long as Jenkins Valves are made.

Jenkins Bros., 80 White Street, New York 13; Bridgeport, Conn.; Atlanta, Boston, Philadelphia, Chicago. Jenkins Bros., Ltd., Montreal, London.

JENKINS VALVES

SINCE 1864

For every Industrial, Engineering, Marine and Commercial Service . . . In Bronze, Iron, Cast Steel and Corrosion-resisting Alloys . . 125 to 600 lbs. pressure

Sold Through Reliable Industrial Distributors Everywhere

When VICTORY Has Become a Reality...

Aberfoyle will again be able to supply your needs. Now required for literally thousands of items of battle equipment and clothing, Aberfoyle Yarns are serving effectively on our fighting fronts.

When they are released from wartime duty, you will find Aberfoyle Yarns better than ever. Technical developments in their manufacture and war-gained experience in their application have effected improvements which will make peacetime clothing more durable, more comfortable and more attractive.

So when Victory has become a reality, watch for these "Fibres for the Fabrics of the Future."

Made of Durene multi-ply mercerized combed cotton yarn
4 WAYS BETTER than ordinary cotton yarns
EXTRA COMFORT ---more absorbent
EXTRA STRENGTH ---longer wear
EXTRA QUALITY ---lasting lustre
EXTRA SERVICE ---easy to wash
* Reg. U.S. Pat. Off. © 1944

NEOPHIL

MADE OF Wearwist YARN MERCERIZED COTTON

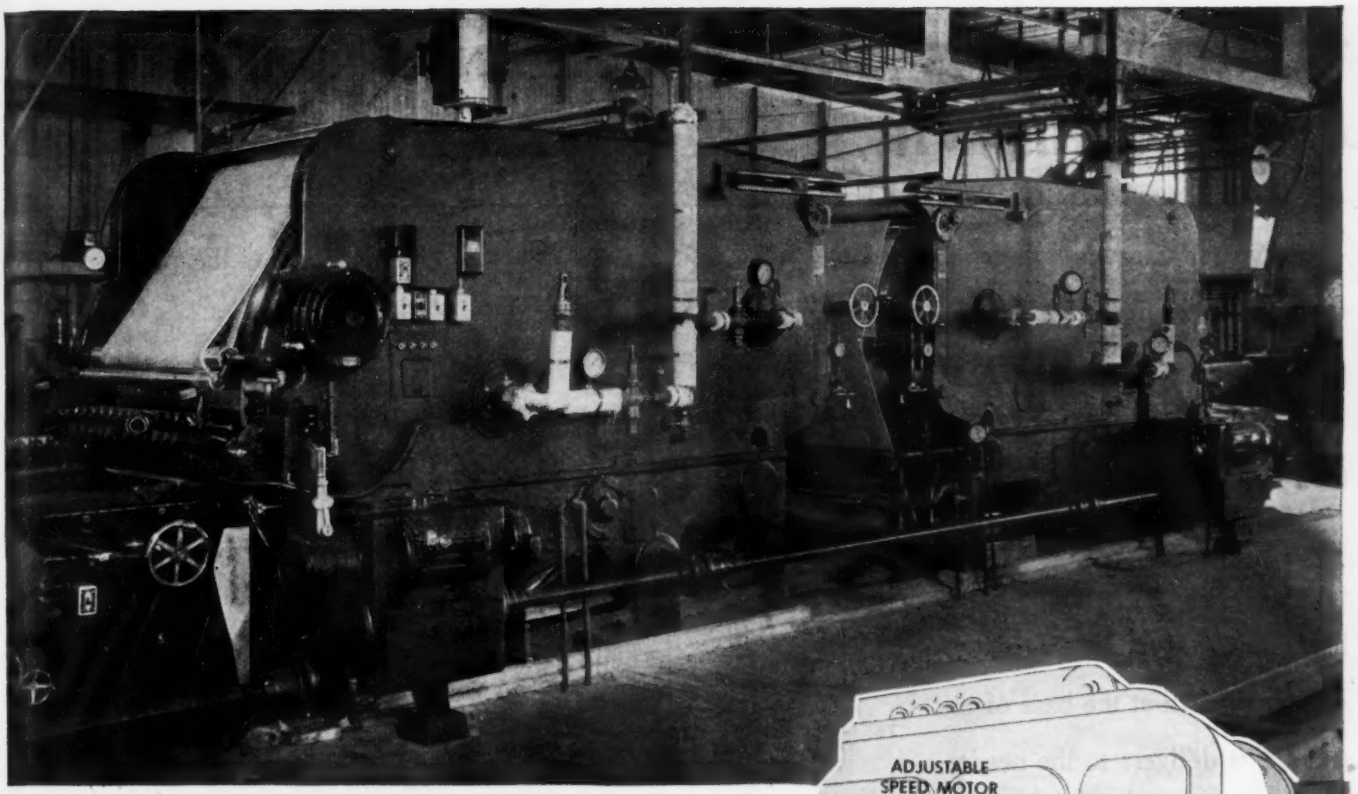
Neophil, the Nylon Seaming and Looping Thread for Nylon Full-Fashioned Hosiery, made by the Premier Thread Co., Pawtucket, R. I.

ESTABLISHED 1883

aberfoyle YARNS

AMERICA'S OLDEST MERCERIZERS OF FINE COTTON

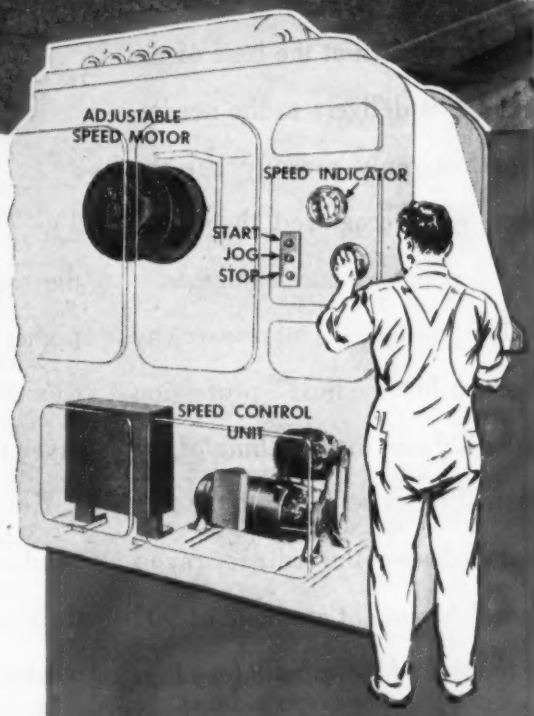
ABERFOYLE MANUFACTURING COMPANY
123 South Broad Street, Philadelphia 9, Pa.
—and in the South
ABERFOYLE MANUFACTURING COMPANY
Belmont, North Carolina
Representatives in principal textile centers of the world



SANFORIZER SPEED *INSTANTLY* *ADJUSTABLE* TO SUIT ANY MATERIAL

Important advantages are gained through the use of Reliance V★S Drive on this Morrison Sanforizing Machine and other textile processing equipment. Chief among these advantages is the easy and instant control of speed, providing the proper operating rate for a variety of materials. Another is the fact that starting, stopping and speed changing can be controlled at points remote from the driving units.

If you are operating equipment of this type without the help of Reliance V★S Drive, we believe that it will pay you to talk with a Reliance Application Engineer. The chances are that V★S results will prove abundantly worth while—in increased production and improved quality and uniformity of finished material.



V★S Drive is a compact, all-electric adjustable-speed drive for alternating current circuits. V★S is notable for the ease with which smooth starting, stopping and speed changes can be controlled from remote stations.

RELIANCE ELECTRIC & ENGINEERING CO.

1086 Ivanhoe Road • Cleveland 10, Ohio

Birmingham • Boston • Buffalo • Chicago • Cincinnati • Detroit • Greenville (S. C.) • Houston Kalamazoo • Los Angeles • Minneapolis • New York • Philadelphia • Pittsburgh • Portland (Ore.) • St. Louis • San Francisco • Syracuse • Washington, D. C. and other principal cities.

RELIANCE A·C D·C MOTORS

"Motor-Drive is More Than Power"

TEXTILE "MEDICS" HAIL IMPORTANT DISCOVERY — A CURE FOR NIP-I-TIS, CURSE OF KNIT GOODS INDUSTRY

For years the rayon knit goods industry has suffered losses running into large figures because of "nip-i-tis," which is the "scientific" name for unsightly tight stitches in knitted fabrics. The cause of this "disease" has long been known — namely the catching of the yarn at the base of the cone as it delivers to the needle. However, only recently has the fact been recognized that there is a dependable cure available.

Long and persistent research by the textile "medical" profession has disclosed that catching of the yarn at the base is due to the fact that the base of the ordinary rayon cone is wound at an angle of 90° *to the axis of the spindle* (see Fig. 1), thus putting all layers of yarn at the base on the same horizontal plane.

Research has also revealed that catching or nipping can be eliminated by winding the base of the cone at an angle of 90° *to the surface of the paper cone* (see Fig. 1). Thus each layer of yarn at the base is laid in a successively higher horizontal plane so that it cannot drop down and "nip" the layer underneath.

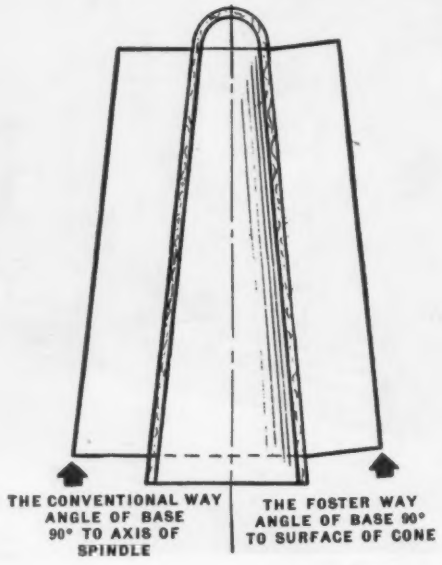


FIG. 1

Not all winding machines can wind a cone in this manner, but the Foster Model 75, it is pointed out, has been winding cones of this type for years and is highly recommended for the purpose (see Fig. 2).

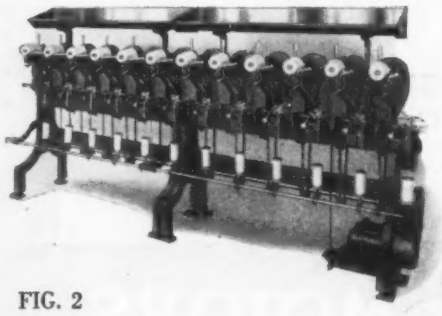


FIG. 2

An important by-product of the Foster Model 75 cone, it was also discovered, is that it directs the pressure of the yarn downward against the taper, thus permitting the cone to hold its shape better, and minimizing "sluffing," another "disease" quite prevalent in the rayon knit goods field.

The manufacturers of the Foster Model 75 state that their machine also has another advantage which make it especially suitable for winding synthetic yarns, such as a slow starting device to prevent yarn strain, total enclosure of all lubricated parts to prevent soiling of yarn, and ball bearings on the spindle and the drive shaft for high winding speed and for reduction in power consumption.

The machine is illustrated and described in detail in the company's Bulletin A-92, which will be mailed on request without charge or obligation.

This advertisement was published by Foster Machine Co., Westfield, Mass., U. S. A., Southern Office, Johnston Bldg., Charlotte, N. C.; Canadian Rep., Ross Whitehead & Co., Ltd., University Tower Bldg., 660 Ste. Catherine St. West, Montreal, Quebec.

REVERSIBLE DROP BOX PICKERS NOW VASTLY IMPROVED by Special Compositions Molded-In!

1 Special hard composition bearing around spindle rod requires no oil.

2 Proper cushion to shuttle point comes from softer composition at picker stick contact.

3 Shuttle point loosening is eliminated by special composition at shuttle contact.

4 Perfect throw to shuttle is assured throughout this picker's longer life.

5 Reaming-out of hole or other alteration is unnecessary. These pickers are tailored-to-fit.

Pickers now engineered by Dayton Rubber technicians are wiping away today's picker problems.

They embody a different and vastly improved type of one-piece unit construction with special compositions molded in; each different composition doing a special job. One prevents wear of the bearing, another provides ideal cushion at picker stick contact, still others eliminate shuttle point loosening, and assure perfect throw to shuttle. Their accurate design makes reaming-out of hole unnecessary. No aging or dipping required.

They have a far longer life, they operate with remarkable efficiency, and give lower costs per loom hour of operation. Throughout the country, Dayton Reversible Drop-Box Pickers are specified as standard.

Get the benefit of Dayton Rubber's Technical Excellence, and long experience in developing products for the Textile Industry.

Have Dayton help you get cleaner, faster, more economical production. Get your complete information on Dayton Reversible Drop-Box Pickers. It comes by return mail.

THE DAYTON RUBBER MANUFACTURING CO.

Dayton 1, Ohio Waynesville, N. C.

Main Sales Office:
Woodside Bldg., Greenville, S. C.

KEEP ON BUYING WAR BONDS

DELUXE LOOP PICKERS

. . . are certain to reduce weaving costs. They're easier to install, twice as strong, they keep their shape, and "stay put" on the stick.

Pickers by

Dayton Rubber

REG. TRADE MARK THE DAYTON RUBBER MFG. CO.

The Mark of Technical Excellence in Synthetic Rubber

JOHNSON & BASSETT

THEY REQUIRE ABOUT ¼ OF THE H.P. NEEDED FOR FRAMES

That's partly because they have ball bearing spindles and roller bearings at other important points

12 OTHER IMPORTANT ADVANTAGES

1. The J & B Mule produces a true woolen yarn — superior in strength, elasticity, loftiness, roundness and uniformity of size and twist to that produced by frame spinning.
2. It permits inspection of the thread.
3. It will handle a much coarser roving than a frame, thereby increasing production at the card by 15 to 20%.
4. It will successfully spin short staple roving which will not hold together on a frame.
5. Spindle for spindle, it will produce as much as a frame, due to a practical operating speed and negligible breakage.
6. The cost of the yarn produced is at least ½ that of yarn produced on a frame.
7. Its initial cost is several times less than that of frames with equal production.
8. Its cost of upkeep is exceptionally low.
9. The J & B filling package does not require rewinding for an automatic loom.
10. Changes for spinning different types of yarn on the J & B Mule are easily and quickly made.
11. Mule bobbins cost less than frame bobbins.
12. The J & B Mule requires less floor space per lb. of yarn produced than other methods of wool spinning.

THE J & B SPINDLE ASSEMBLY

The spindle is mounted as a unit in a bolster attached to a metal collar board with the collar board bearing of "Durex" and the lower bearing a ball bearing. It automatically adjusts itself to eccentric loads, preventing vibration. Elimination of the step rail means that the spindle bearings are permanently aligned and sticking is eliminated. Speed variations between spindles are surprisingly small.

JOHNSON & BASSETT, INC.

ESTABLISHED IN 1870

MODERNIZED MULES

THERE'S A J&B MULE FOR YOUR PRODUCTION REQUIREMENTS

The J & B Line of wool spinning mules may be conveniently divided into the following classifications:

SMALL PACKAGE MULES — for spinning filling yarn only, taking bobbins from 8" to 10¼" long.

INTERMEDIATE PACKAGE MULES — for spinning filling yarn or warp yarn, taking bobbins from 9" to 10½" long, or tubes from 9" to 11½" long.

GIANT PACKAGE MULES — for spinning warp yarn only (except when the yarn can be rewound for filling), taking a 13½" bobbin or a 14" tube.

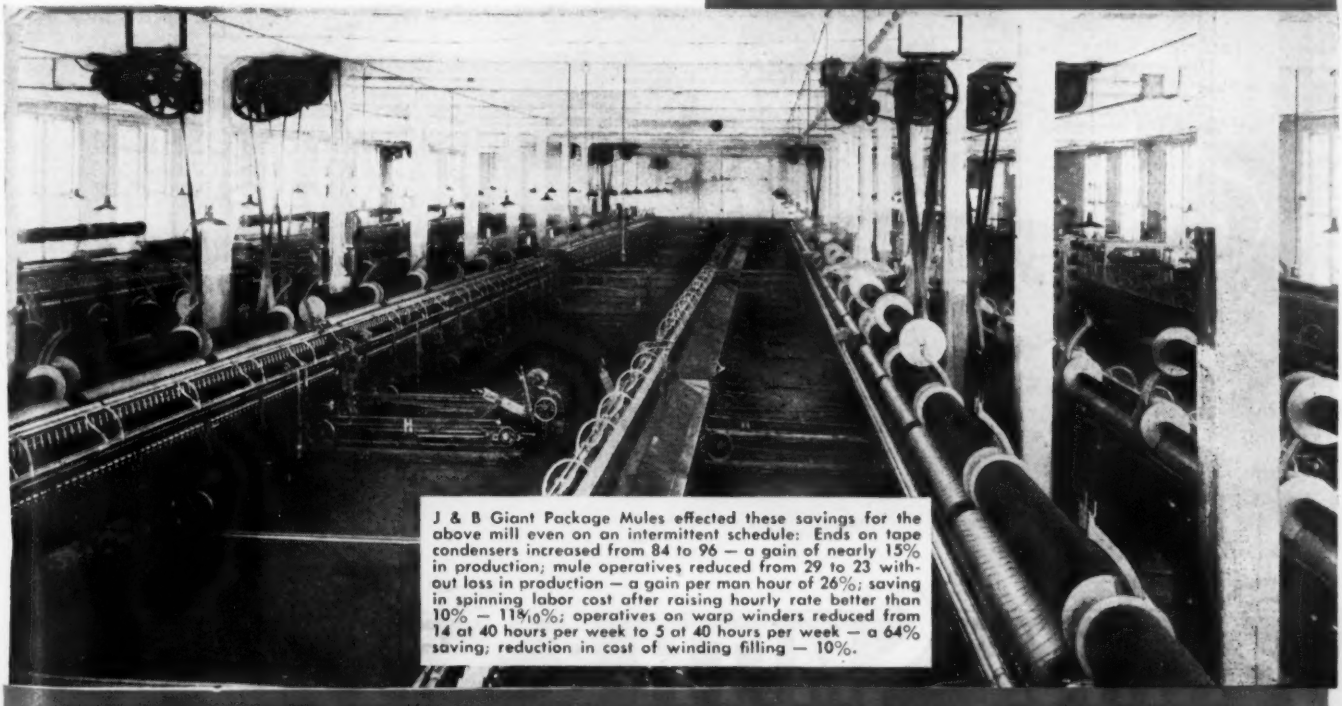
One or more of these models will meet your wool spinning requirements. The Giant Package Mule will increase production by at least 33⅓%, while the other models will increase production up to 20%, as compared with old style mules. All three models are equipped with the specially designed J & B spindle assembly.

Tell us your wool spinning requirements and let us make recommendations.

J & B Small Package for Filling without rewinding

J & B Intermediate Package for Warp or for Filling without rewinding

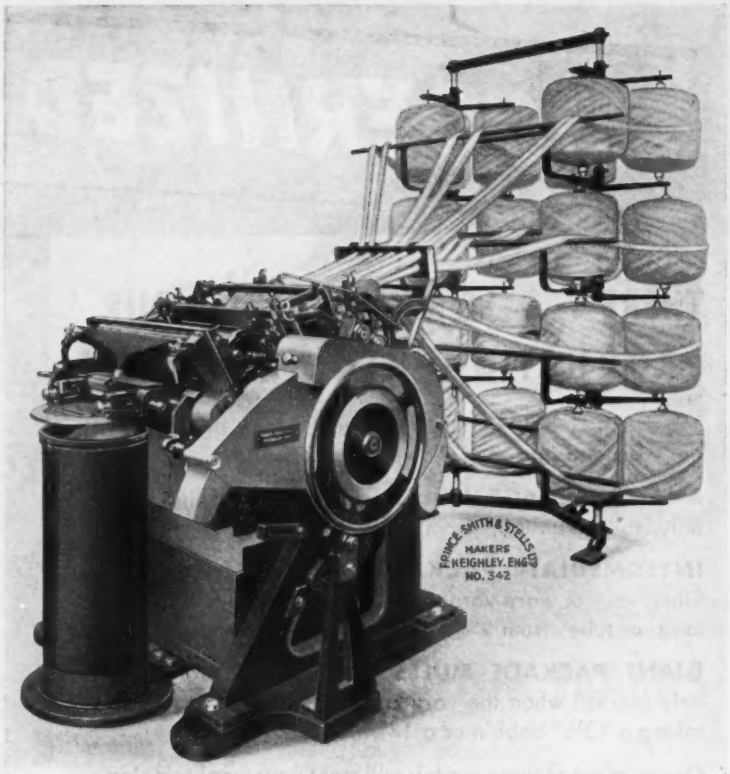
J & B Giant Package for Warp or for Filling Winder



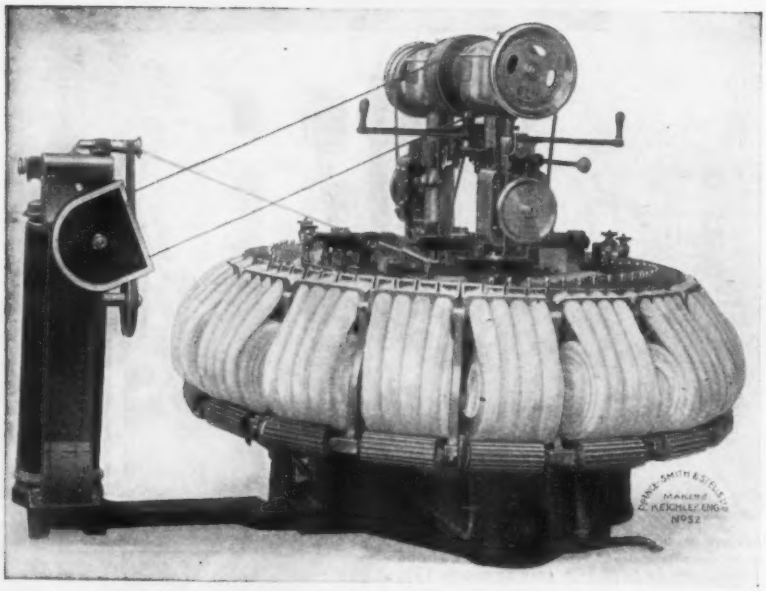
J & B Giant Package Mules effected these savings for the above mill even on an intermittent schedule: Ends on tape condensers increased from 84 to 96 — a gain of nearly 15% in production; mule operatives reduced from 29 to 23 without loss in production — a gain per man hour of 26%; saving in spinning labor cost after raising hourly rate better than 10% — 11 9/10%; operatives on warp winders reduced from 14 at 40 hours per week to 5 at 40 hours per week — a 64% saving; reduction in cost of winding filling — 10%.

Worcester, Massachusetts, U. S. A.

WE ARE MAKERS OF THE CONTINENTAL AND ENGLISH SYSTEMS OF COMBING, DRAWING, SPINNING & TWISTING



WORSTED



THIS UNIQUE POSITION Means WE CAN OFFER YOU OUR SERVICES NO MATTER WHICH SYSTEM YOU ARE INTERESTED IN.

PRINCE-SMITH & STELLS LTD.

WORSTED MACHINERY MANUFACTURERS

KEIGHLEY (Yorkshire) ENGLAND

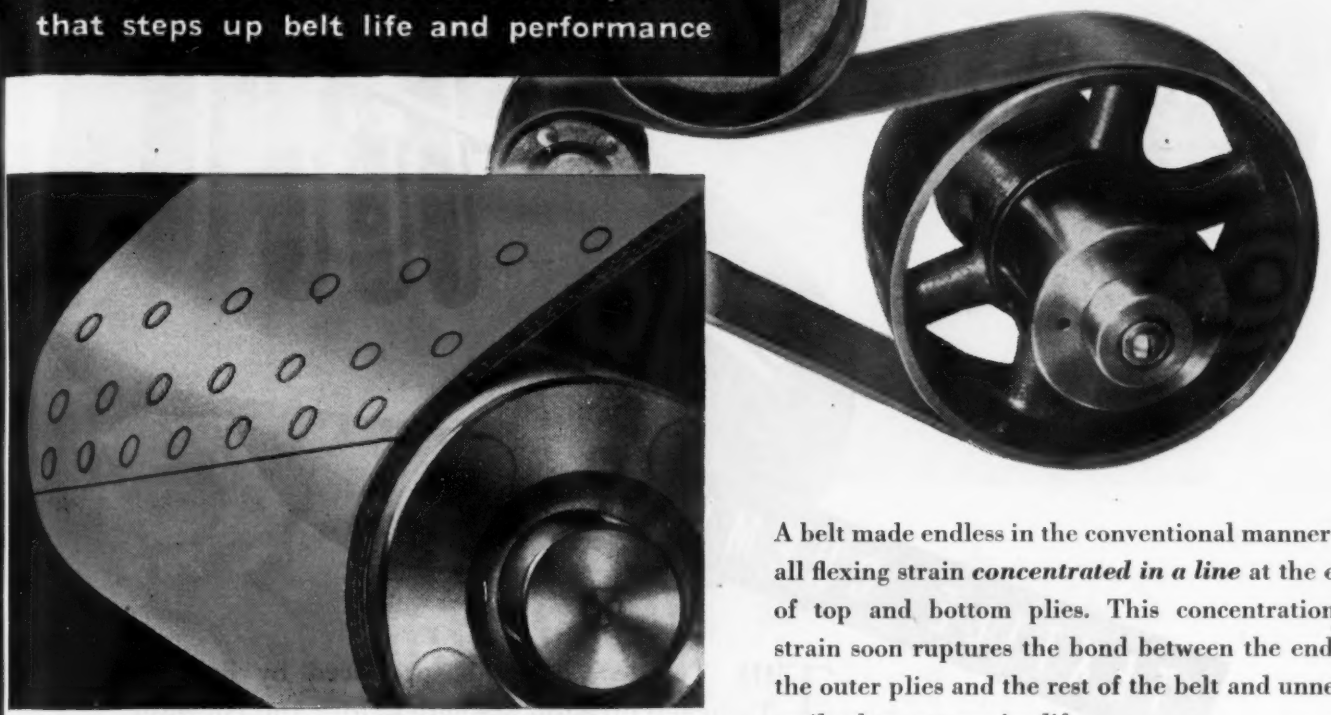
Agents: Atkinson, Haserick & Co., 211 Congress Street, Boston, Mass.

Extensible-Tip in CONDOR ENDLESS BELTS

an important MANHATTAN development that steps up belt life and performance

ADVANTAGES

1. Increases flexibility at splice.
2. Can be operated over smaller pulleys.
3. Can be operated at higher speeds and heavier loads.
4. Prolongs splice life 3 to 10 times.
5. Reduces belt and maintenance costs.



All warp threads in outer plies are cut by suitably spaced perforations filled with "live" FLEXLASTICS, which are then vulcanized to become "elastic rivets." These stretch and relax progressively (see illustration) as they pass over the arc of contact, providing stress relief for every warp thread, permitting use of smaller pulleys on short-center drives and higher speeds.

Above: Ordinary type of splice which failed when ply end gave way. ***Below:*** A splice with EXTENSIBLE-TIP, still unbroken after running 10 times as long under identical conditions. This increased life is due to ***extended-area stress relief.***

A belt made endless in the conventional manner has all flexing strain ***concentrated in a line*** at the ends of top and bottom plies. This concentration of strain soon ruptures the bond between the ends of the outer plies and the rest of the belt and unnecessarily shortens service life.

MANHATTAN'S EXTENSIBLE-TIP—an exclusive, patented Strength Member development—provides multiple stress relief, uniformly ***distributed over an area*** of the belt where the duck ends. In addition, the end is welded to the adjacent ply by "elastic rivets" made from special FLEXLASTICS.

It is this extended area of stress relief that makes the Extensible-Tip last as long as the belt, lets you run the belt at higher speeds, over smaller pulleys, on short-center drives, and increases its service life from three to ten times over ordinary methods of making the same belt endless.

You protect the continuity of your production when you use MANHATTAN Endless Belts, all of which are made with the ***extended-area stress relief*** provided by the MANHATTAN EXTENSIBLE-TIP.

*The term **FLEXLASTICS** is an exclusive MANHATTAN trade mark. Only MANHATTAN can make FLEXLASTICS. Condor Belts are now made in the dark, war-time color.*

THE MANHATTAN RUBBER MFG. DIVISION

OF RAYBESTOS-MANHATTAN, INC.

EXECUTIVE OFFICES AND FACTORIES PASSAIC, NEW JERSEY

THE Textile Chemicals produced by Emery's Twitchell division are under close and constant laboratory control through all steps. The resulting uniformity of quality makes them stand-bys in many leading cotton, woolen, and rayon mills.

These products have been developed concurrently with modern textile manufacturing methods. The object of our research has been to meet the exacting demands of high speed production, and to provide products with such plus properties as stability, non-gumming, and resistance to corrosion.

Among the well-known and time-tested Twitchell Products are Wool and Worsted Oils 179N and MC, 3X and 304 for Sanforized finishing, and 681 and 687 for processing all types of man made yarns.

Tell us your requirements — both regular and special. Our supplying you with sample oils for your purpose will not obligate you in any way. So write today.

LABORATORY CONTROLLED THROUGHOUT PRODUCTION — EMERY INDUSTRIES INC.

EMERY INDUSTRIES, Inc.

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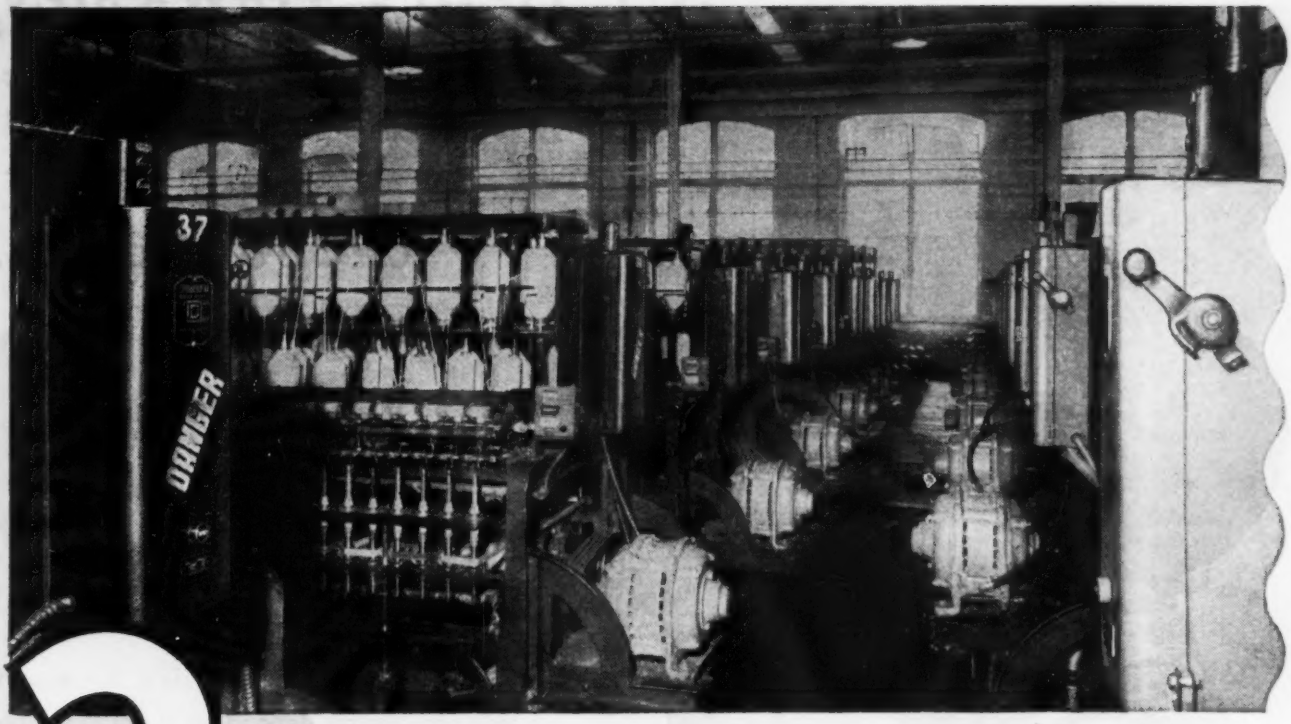
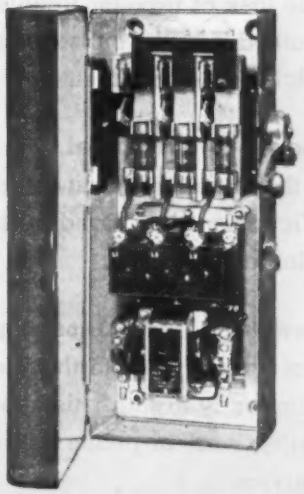


3 important advantages in this installation of Square D Combination Starters

SAVES TIME Disconnect Switch and Magnetic Starter are housed in one enclosure—thus saving mounting and wiring time.

CONSERVES SPACE Square D Combination Starters require substantially less space than individually mounted switches and starters.

INCREASES SAFETY The cover of the enclosure is interlocked with the operating handle of the disconnect. Thus, the cover cannot be opened on a "live" starter.



Write for Bulletin 8538 which gives details and illustrations of complete line. Address Industrial Controller Division, Square D Company, 4041 North Richards Street, Milwaukee 12, Wisconsin.

SQUARE D COMPANY

DETROIT • MILWAUKEE • LOS ANGELES

Mr. Henry Hawksley is spread too thin these days....

You know Henry. He's the supervisor you can always depend on to get to the bottom of spinning and twisting troubles. He has a genius for keeping overworked equipment operating smoothly, and for making able hands out of green help. Time was when there were several "Henrys" in every up-and-coming mill – but, alas, not today! Those that are left have to be spread very thin – *too* thin.

But there is help for Henry – from a man on our payroll who works for you.*

***THE VICTOR SERVICE ENGINEER** is working with the "Henrys" in hundreds of war-busy mills – saving their time by taking over the task of traveler trouble-shooting. And the time saved is gained in every subsequent process, changing delivery complaints to compliments.

MORE THAN EVER BEFORE, you need this resourceful cooperation – the friendly, result-getting Victor service that has made Victor travelers standard for over 8,000,000 spindles of spinning and twisting.

NEW FIBERS, NEW BLENDS that add to "Henry's" headaches are not usually new to the Victor Service Engineer. You'll find him ready to share his important information on any fiber . . . write, wire, or phone the nearest Victor office . . . for *prompt* service.

Victor Ring Traveler Company

PROVIDENCE, R. I. — 20 Mathewson St. — Tel. Dexter 0737

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VICTOR Ring Travelers

But when S-C-T Combed Cotton Yarns return from the wars, you can count upon their uniformity and free-running smoothness to help you turn out more marketable merchandise faster . . . garments of greater beauty, comfort and wear.

STANDARD's *absolute control* of S-C-T Yarns from cotton boll to finished cone safeguards their quality characteristics as well as your quality production. ★

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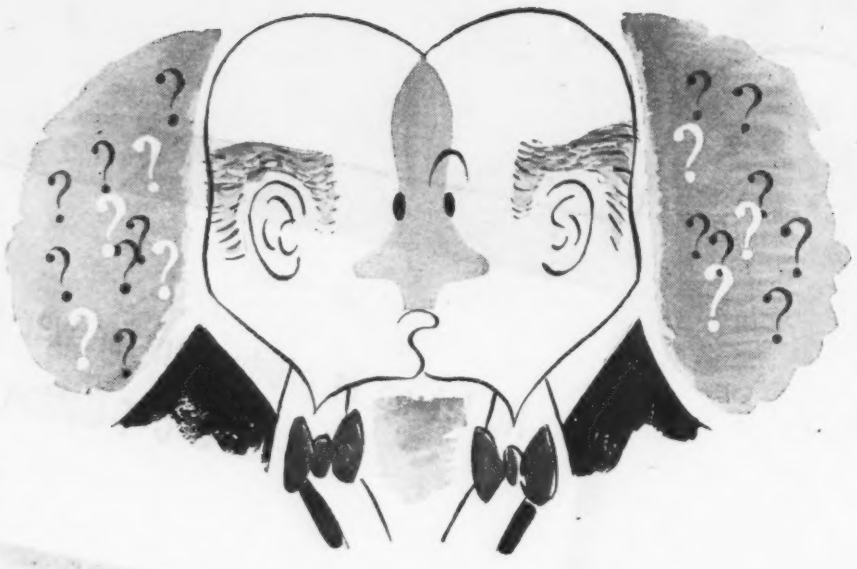

Are you asking yourself these questions?

Can I obtain uniform thickness of lap from the "finisher picker"?

What's the best way to eliminate the static electricity that affects thread or yarn?

Can I avoid the brittle condition that causes fly and breakage?

How can I keep fibre ends tight during slubbing and roving?

How can I best reach the high temperatures and humidities required for twist setting?

How can I be sure of getting the maximum use of looms, possible only with strong yarn?

EASY ANSWER:

TEXTILE MILLS have been solving important problems with Carrier Air Conditioning since 1906. As a pioneer in this field, Carrier has the highly specialized experience, the wide background of accomplishment, so necessary for the most successful handling of present requirements and anticipated post-war needs. Consult your Carrier representative.

Carrier Corporation, Syracuse, N. Y.

Carrier

AIR CONDITIONING • REFRIGERATION

INDUSTRIAL HEATING

Cotton Shirtings – one of many types of fabrics for which we dye yarns.

4 Plants . . . 1 Quality

Order any standard Franklin Process color from Providence to-day and from Philadelphia, Greenville or Chattanooga a year later; its shade and its fastness will be exactly the same. That's because all Franklin Process plants use identical formulas and dye by the same method, – the famous Franklin Process.

Hence time, geography, more than one source of supply, or a change from one plant to another, is no obstacle to color uniformity.

Franklin Process offers not only unequalled yarn dyeing capacity, but also unrivalled versatility of equipment, – from 1 to 2500 lbs. in a single batch.

No matter which Franklin Process plant takes your order, that plant will fill it which can serve you best.

Franklin Process

LARGEST PACKAGE DYERS IN THE WORLD

New York Representative, 40 Worth St.; Chicago Representative, 100 W. Monroe St.

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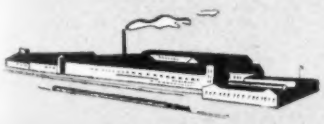

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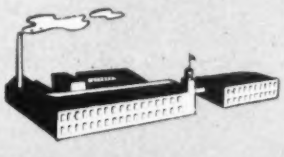

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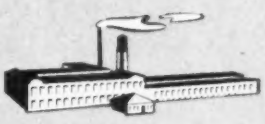
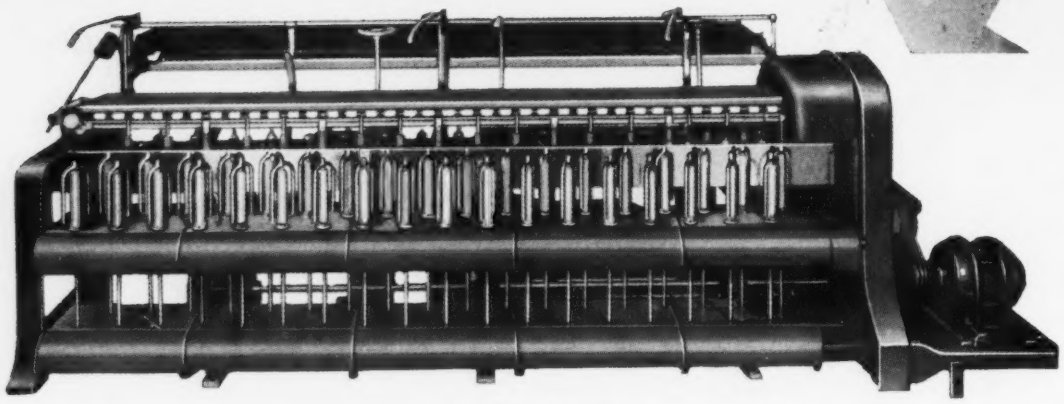


CHATTANOOGA

H & B HIGH-DRAFT ROVING FRAME



Put it on your PREFERRED LIST for After the War!

ONE OF THESE MACHINES will replace two or three conventional speed frames. It is sturdy and of modern design. Mechanical features include the following:

Exceptionally strong differential gearing ... draft changes quickly made ... simplified builder, easily adjustable ... articulated quiet chain bobbin shaft drive ... superior finish, including polished non-rusting metallic clearer covers ... single or double sliver lifting rolls ... angle iron creels.

The frame was specially designed to accommodate our High-Draft Roving System, 4 or 5 roll, with Patented Scroll Condenser. This system will produce 3.00 to 6.00 hank roving from 50 to 60 grain sliver in ONE OPERATION. It is drafting cotton up to 30 on speeders and up to 16 on intermediates. With mixtures, such as rayon and cotton or rayon and wool, some installations are drafting as high as 48 in one operation.

Our Bakelite Patented Scroll Condenser has greatly simplified high drafting of sliver. It eliminates static and prevents the flaring and spreading of the fibres by condensing them into a compact sliver without disturbing parallelization, and gives just enough false twist to allow better control in the drafting zone.

The H & B High-Draft Roving Frame not only greatly reduces the investment required in the card room, but also frequently increases production as compared with the equipment it replaces and invariably reduces manufacturing cost. This reduction has been as much as 6/10 of one cent. per lb. of yarn.

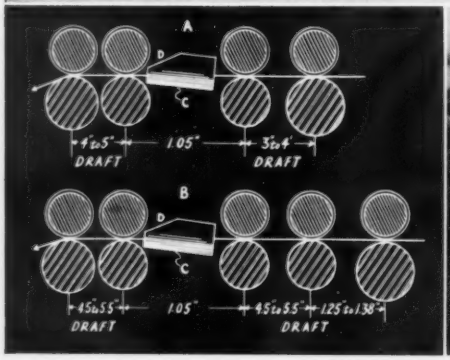
Put this frame on your preferred list for after the war and let us know about your plans NOW, so you won't have to wait too long for delivery after we are permitted to accept orders for textile machinery.

★

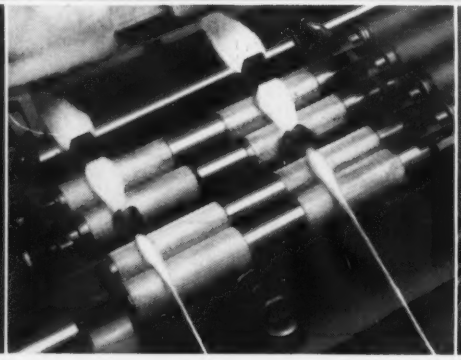
H & B AMERICAN MACHINE CO.
PLANT AT PAWTUCKET, RHODE ISLAND

Boston Office, 161 Devonshire Street; Charlotte Office, 1201-3 Johnston Bldg., Atlanta Office, 815 Citizens & Southern National Bank Bldg.; Export Dept., United States Machinery Co., 115 Broad Street, New York, U. S. A.

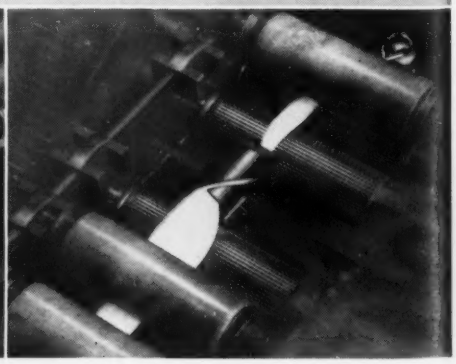
Diagrams showing drafts obtainable with 4 Roll and 5 Roll High-Draft Roving Systems



4 Roll High-Draft Roving System with Patented Scroll Condenser



5 Roll High-Draft Roving System with Patented Scroll Condenser



EASTERN STAINLESS offers a Sheet Mill Finish for Every Need!

Producing Stainless Steels exclusively, Eastern Stainless offers you an extensive range of desirable sheet mill finishes—three of which are illustrated here.

The full range extends from a superbly polished and highly reflective Eastern Stainless No. 7 Finish—polished one or both sides as specified—to various ground or cold rolled surface conditions and finally to the dull but dense pickled Eastern Stainless No. 1 Finish. Such variety is certain to meet any specific requirements, including exceptional corrosion resistance, ease of cleaning, architectural beauty and highest performance in fabrication.

Eastern Stainless possesses unusually desirable combinations of cold forming and drawing properties, strength, ductility and weldability in addition to these surface finishes. Available in twelve standard and additional grades as required, Eastern Stainless now is specified for an extensive number of applications in widely diversified industries.

Eastern Stainless Technical Staff will gladly assist with your problems. Feel free to ask Eastern for the answer whenever Stainless is the question.

EASTERN STAINLESS STEEL CORPORATION

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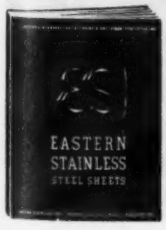
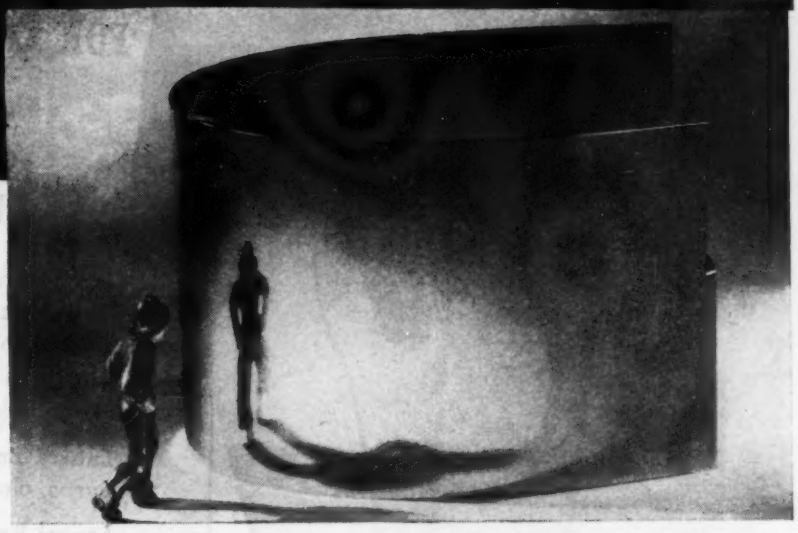
FREE...NEW 96-PAGE CATALOG

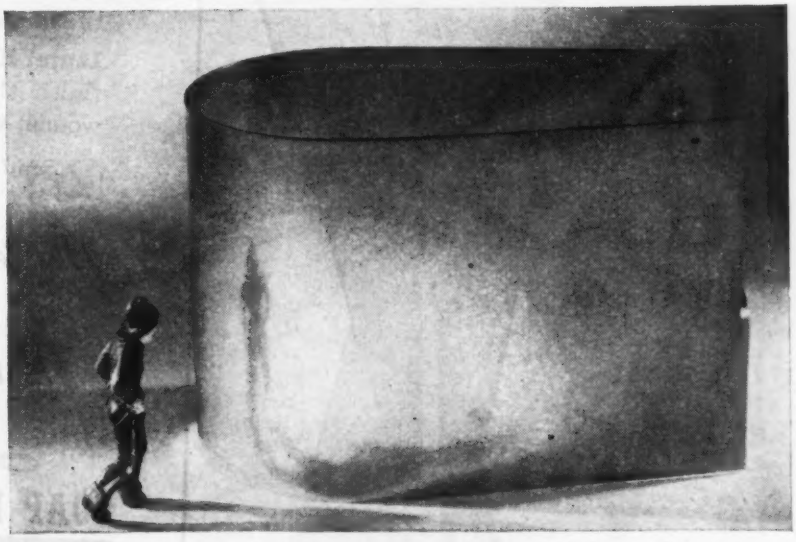
Here's a valuable addition to your reference files—an office-handy encyclopedia giving authentic information on modern applications of Stainless Steels in many great industries including your own. Contains much technical data compiled by Eastern Stainless specialists. Write for your *free* copy of the 1945 Eastern Stainless Catalog *today*.



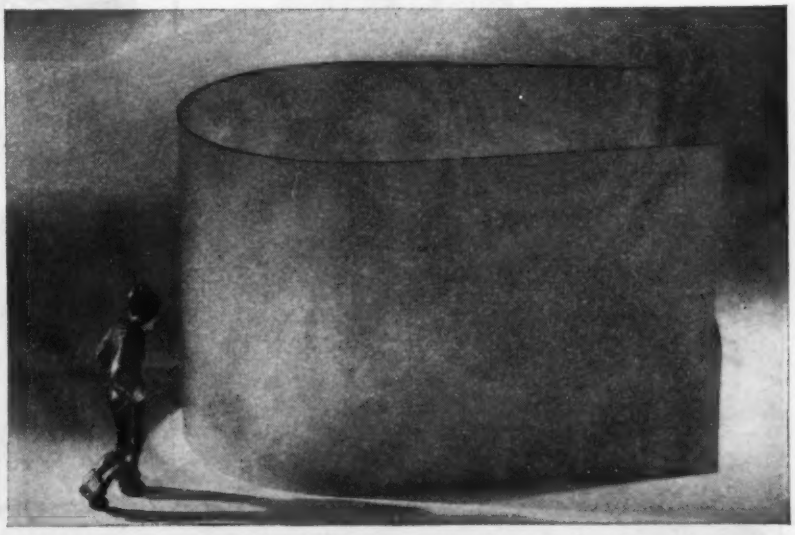
JML Co B-D1



No. 4 Finish—Highly reflective, possesses a silvery appearance.



No. 2B Finish—Is mildly reflective, dense, bright and lustrous.



No. 1 Finish—A pickled surface, not reflective but bright, dense.

FOR G. I. Full-Fashioneds—

LAUREL EMULSIONS, OILS AND FINISHES FOR RAYON AND COTTON

It's a new era for cotton and rayon full-fashioneds ... they're in the Army now. It's a new era, too, with new problems for finishers, but Laurel Oils and Finishes can simplify their full-fashioned processing. Available for immediate delivery.

Laurel Emulsions give more even cotton yarns, clearer stitch and proper regain.

Laurel Rayon Oils and Finishes help control rayon twist and stretch, prolong the life of the fibers.

Laurel Hosiery Finishes produce the smooth finish that is the pride of the American woman whether on parade or promenade.

Send for trial order and formula today.

Throw your scrap into the fight

SOAPS • OILS • FINISHES

Laurel

SOAP MANUFACTURING CO • INC•

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WAREHOUSES PATERSON, N. J., CHATTANOOGA, TENN., CHARLOTTE, N. C.

A MODERN TOOL FOR MODERN INDUSTRY

-MEGATHERM*-ELECTRONIC HEAT

Here is high-speed uniform heat—precision controlled and directed—offering tremendous possibilities for new products and new processes . . . for faster, more efficient production . . .

That's Megatherm—high-frequency electronic heating at its best—a modern tool with uses as broad as industry itself.

In the processing of plastics, foods, drugs, candy, paper, textiles, wood products, and in printing, book-binding . . . in the surface hardening of metals, brazing, soldering, and annealing . . . to mention only a few of an endless number of possible applications.

Megatherm is available in a range of compact, efficient models—powers from 3 kilowatts to 100 kilowatts. One of these models is right for your work.

Now, while you are planning for the future, is the time to get the story on Megatherm—learn how it will speed your production—cut your costs—make new designs—new products and new materials possible. Write for data.

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Federal Telephone and Radio Corporation

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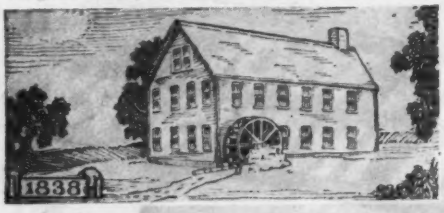
INDUSTRIAL ELECTRONICS DIVISION

AN IT&T ASSOCIATE

Newark 1, N. J.

Original Cheney Brothers Mill



For Five Generations a Part of the American Scene

Skyline view today

Main office today

The History of an American Tradition in Textile Products

Ever since our country was young, Cheney Brothers have produced distinguished textile products for America's homes and wardrobes.

In fact, the first really successful silk thread manufacturing in the United States was done by Cheney Brothers in 1838. And that was the start of a truly American tradition in fine textile production.

In 1852, Cheney Brothers began to produce machine-twist yarn; and in 1861 they were manufacturing ribbon on a large scale.

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In 1880 velvet and plush manufacture began; the end of the century saw the development of jacquard woven fabrics in the Cheney plant.

And now – in 1945 – this constant planning and research still goes on. Cheney Brothers' long experience enables them to make new fabrics from new materials – to actually engineer a fabric for a specific end use.

Many of these new Cheney fabrics will be available soon after Victory. Indeed, many are the direct result of our technical wartime research. And when they do appear, American consumers will find them the best possible fabrics for every purpose.

Meanwhile, all Americans prepare for the peacetime tomorrow by investing in War Bonds today.

CHENEY THREAD

CHENEY BROTHERS

Quality manufacturers since 1838

350 FIFTH AVENUE, NEW YORK 1, N. Y.

Velvets – Pile Fabrics – Cravats – Upholstery and Decorative Fabrics
Yarns for Industry – Men's Wear Fabrics – Machine Thread – Industrial Fabrics

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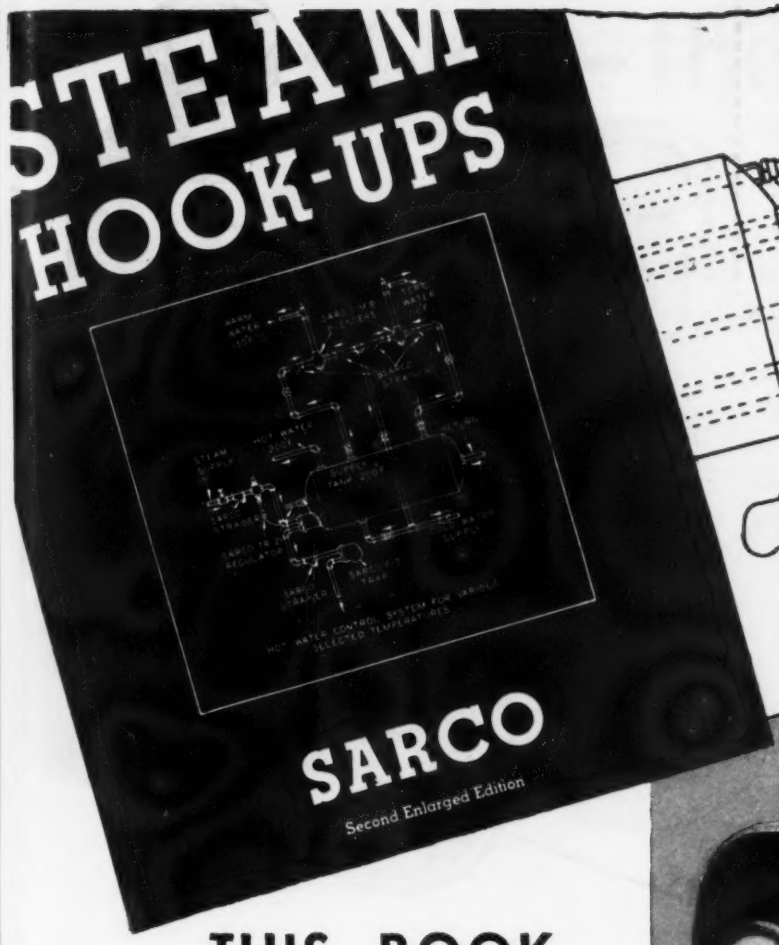
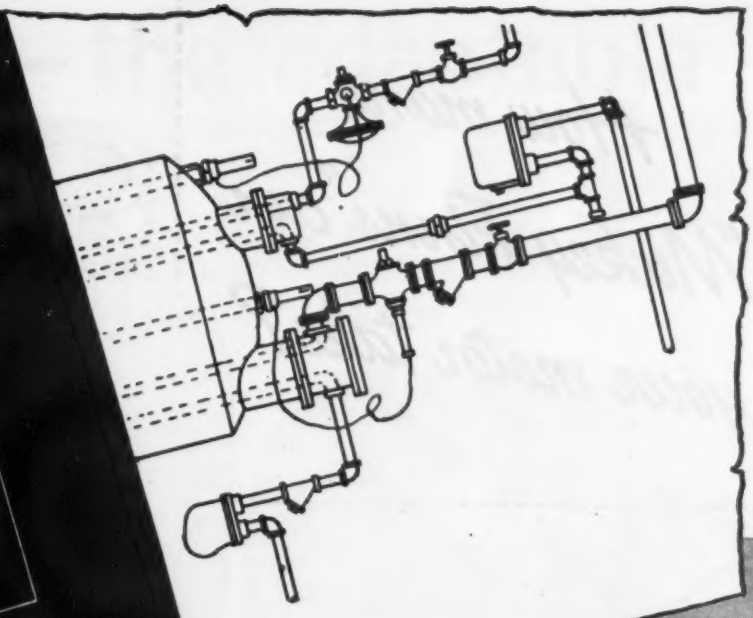
MILLS AT MANCHESTER, CONN.

ALSO AT MANCHESTER, CONNECTICUT, A SUBSIDIARY...PIONEER PARACHUTE COMPANY





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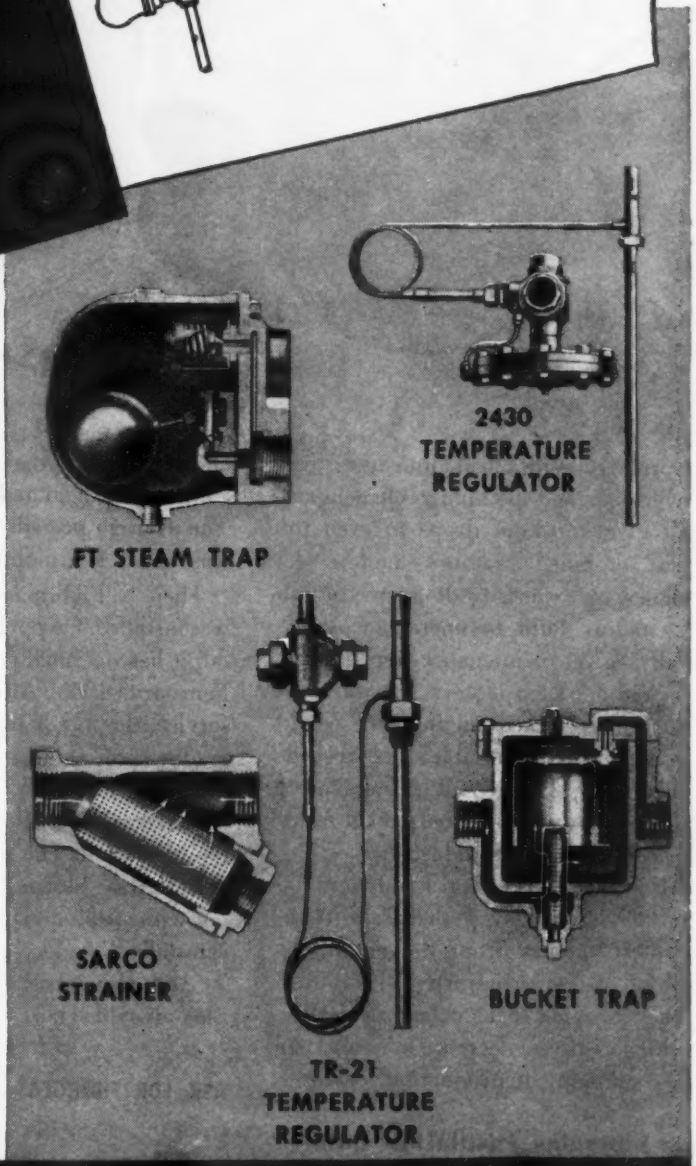
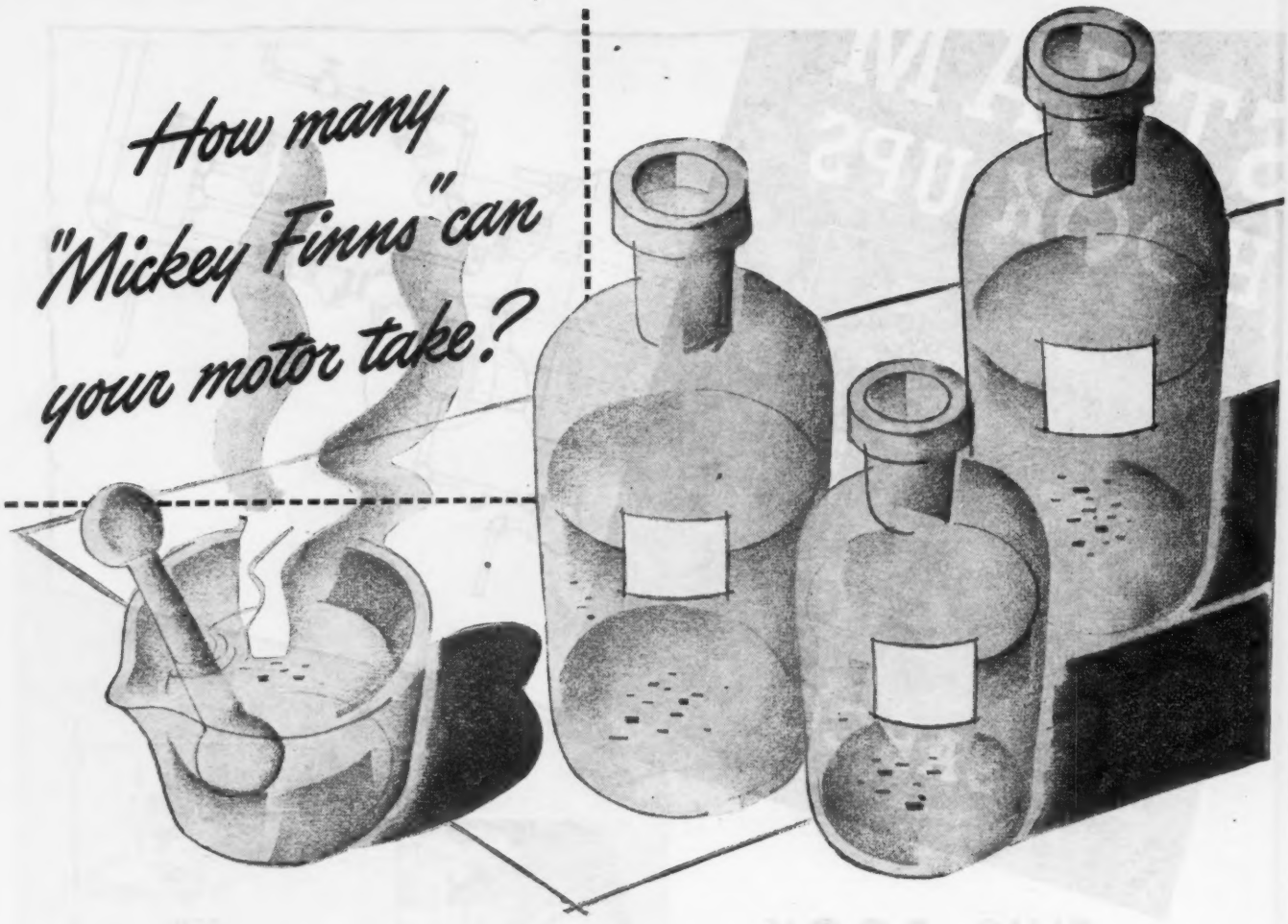
Send for yours today



47

SARCO

How many "Mickey Finns" can your motor take?



Corrosive acids, heat, moisture, dirt, overloads and the human element can all give knockout drops to even the best designed motors — motors designed by experts to do a specific job — motors built to operate economically, give maintenance-free service.

Without such motors, the war production of American industry would not have been possible. Yet, records show motor failure still imposes heavy time and dollar loss on nearly every concern in every industry.

Fiberglas* Electrical Insulation Materials have proved their ability to protect motors from the conditions which cause a majority of failures. They provide that "extra" protection which assures a decrease in down time and consequent production losses.

Fiberglas Insulation cuts rewind shutdowns

The experience of a Michigan manufacturer is typical of benefits obtained from Fiberglas Insulation:

Main power boiler blower fans are located on top of the boilers, operating at high ambient temperature, with cooling air for the motors carrying considerable acid and chemical fumes. The average periods between rewinds was from six months to one year.

Then a Fiberglas-insulated motor was installed. Except for one short period, it has operated continuously since February, 1938. After four years of service, the motor was tested. Megger readings were high, indicating the excellent condition of the insulation. The motor was blown out with steam and reinstalled.

And remember, the only added cost in rewinding with Fiberglas is the slight difference in insulating materials.

Fiberglas Electrical Insulation Materials, in plain and treated forms, are available *now*. For complete information, consult your distributor or write us for new catalog. *Owens-Corning Fiberglas Corporation, 1864 Nicholas Building, Toledo 1, Ohio. In Canada, Fiberglas Canada Ltd., Oshawa, Ont.*

* * *

BE SURE TO SEE THE FIBERGLAS ELECTRICAL INSULATION MATERIALS EXHIBIT

THE NEXT SHOWINGS ARE: Netherlands Plaza, Cincinnati, March 13-15; Henry Grady Hotel, Atlanta, March 20-21; Tutwiler Hotel, Birmingham, March 27-28; Jefferson Hotel, St. Louis, April 3-4-5-6; Muehlebach Hotel, Kansas City, April 17-18. Locations of showings in Dallas, April 24-25, Houston, May 1-2, and appearances in other cities will be announced later.

ASK FOR FIBERGLAS—IN YOUR NEXT NEW MOTOR—AND ON YOUR NEXT REWIND

FIBERGLAS *ELECTRICAL INSULATION MATERIALS*

*T. M. Reg. U. S. Pat. Off.

ARMY E NAVY

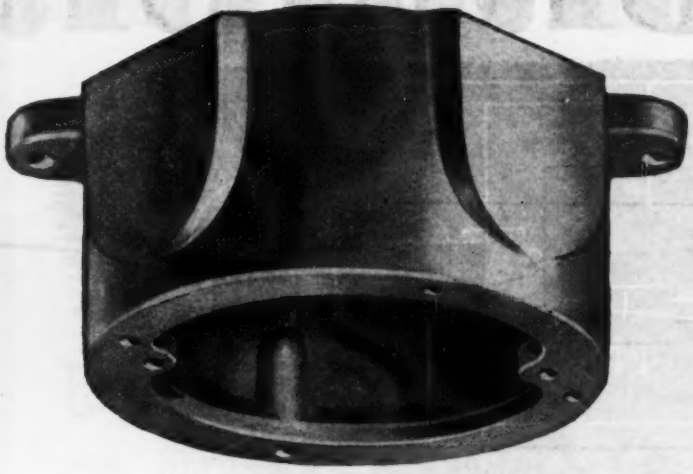
THERE'S A COMPLETE LINE OF FIBERGLAS ELECTRICAL INSULATIONS

YARNS • TAPE • CORD • SLEEVING • CLOTH AND OTHER FORMS. Also available in: Magnet wire, Lead wire, Special wires, Varnished cloth and tape; Mica combinations: Laminates, Saturated sleeving, Varnished tubing, Pressure sensitive tapes, Special products.

Type GRF—the adaptable

CONDULET

(CONDULETS are made only by CROUSE-HINDS)



Type GRF Condulet for Surface Mounting. With Mounting Feet.

Type GRF Condulet for Flush Mounting. With Slotted Holes for Nailing to Concrete Forms.

Adaptable — many uses. Takes blank or hub covers; terminal blocks; many Condulet accessories; standard 4" outlet box covers and wiring devices. Can be used as a

- Junction Condulet
- Plug receptacle Condulet
- Lighting fixture Condulet
- Fixture hanger Condulet

Convertible. At any time after installation Type GRF Condulets can be quickly converted to other uses, as all attachments are interchangeable.

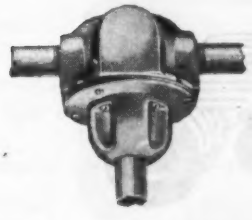
Cast Feraloy Strong and durable. Wide gasket surface for tight and weatherproof assemblies.

Bosses for drilling and tapping on sides and back. Will be furnished blank or factory tapped with tapered threads in any arrangement for ½, ¾, or 1-inch conduit.

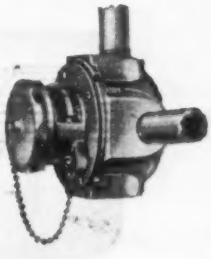
2 Styles. For flush or surface mounting.

3 Depths. 1½, 2¼, or 3 inches inside.

Listed in Condulet Catalog No. 2500, Section 15, Page 31.



Flexible Cushion Fixture Hanger



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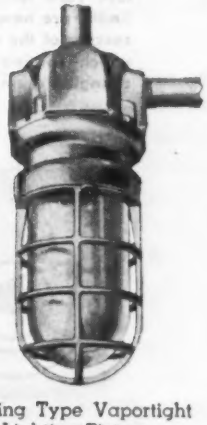

Ceiling Type Vaportight Lighting Fixture

CROUSE-HINDS COMPANY

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Offices: Birmingham Boston Chicago Cincinnati Cleveland Dallas Denver Detroit Houston Indianapolis Kansas City Los Angeles Milwaukee Minneapolis New York Philadelphia Pittsburgh San Francisco Seattle St. Louis Washington. *Resident Product Engineers:* Albany Atlanta Charlotte New Orleans

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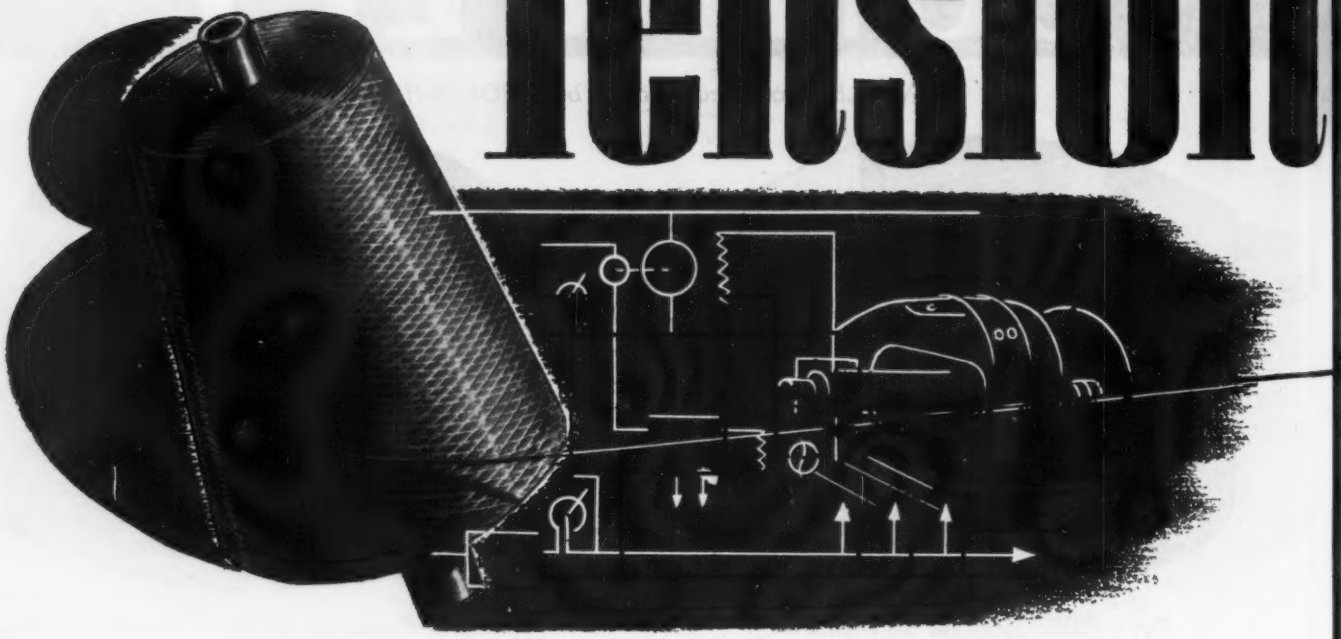
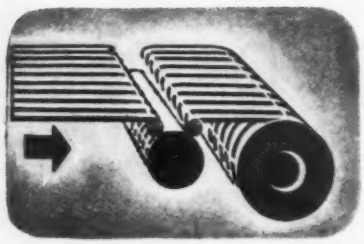
CONDULETS · TRAFFIC SIGNALS · AIRPORT LIGHTING · FLOODLIGHTS

Tensions





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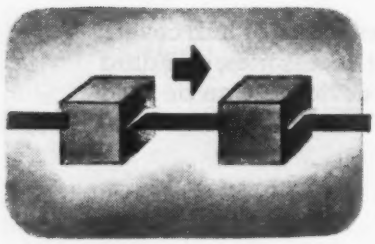

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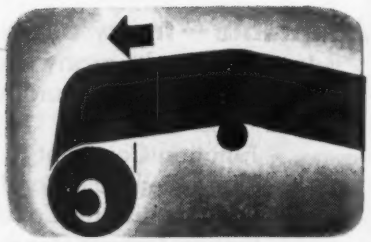

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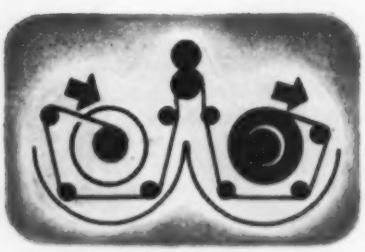

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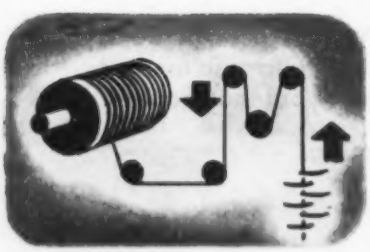

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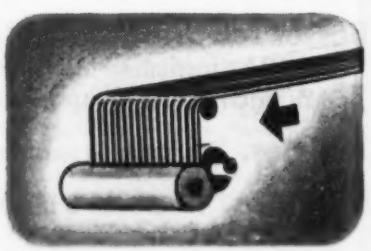

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control GOES Automatic

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Electrical Measurement vs. Human Judgment

Electrical measurement of tension is far more precise and consistent than the most experienced human's sense of touch. Moreover, it can be translated automatically into a continuous, accurate control of motor speed, torque, or power, to maintain the exact tension desired. The tension selected as best for any given grade of yarn or cloth can be set by simply turning a dial, and can always be duplicated accurately.

With the application of G-E automatic tension control, you will make subsequent operations easier and faster because you will be supplying a more uniform product. You will eliminate damage in preparatory processes, and in weaving or knitting and finishing. You will improve the quality of your end products.

Simpler Equipment—Less Maintenance

An important auxiliary benefit of automatic electrical tension control is the elimination of friction devices, gearing, and much other mechanical equipment. The electric devices employed require little attention and little specialized "maintenance know-how."

On the opposite page, we present a few applications of G-E automatic tension control. Subsequent advertisements will tell in detail how these and other G-E systems work. Also, G-E application engineers are at your service to show how these systems can be adapted to your specific equipment, or to work out new systems to solve your particular problems. *General Electric Company, Schenectady 5, N. Y.*

Buy all the BONDS you can—*and keep all you buy*

GENERAL ELECTRIC

660-21-8823

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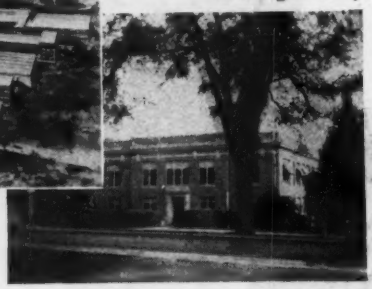
For Five Generations a Part of the American Scene

Skyline view today

Main office today



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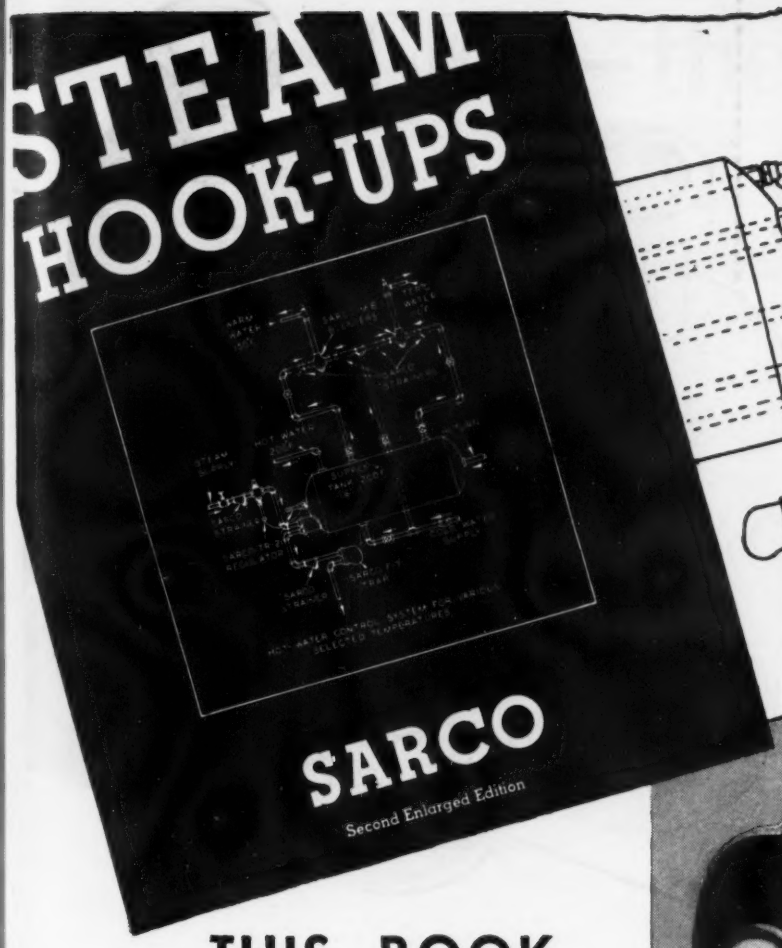

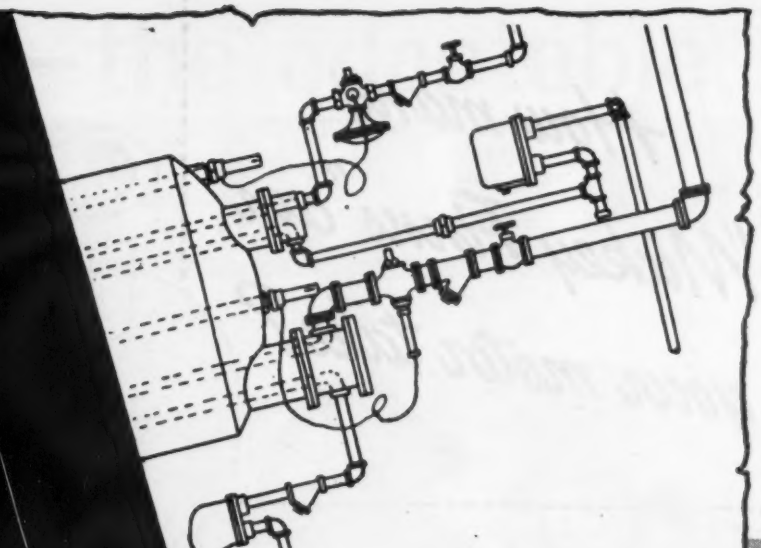

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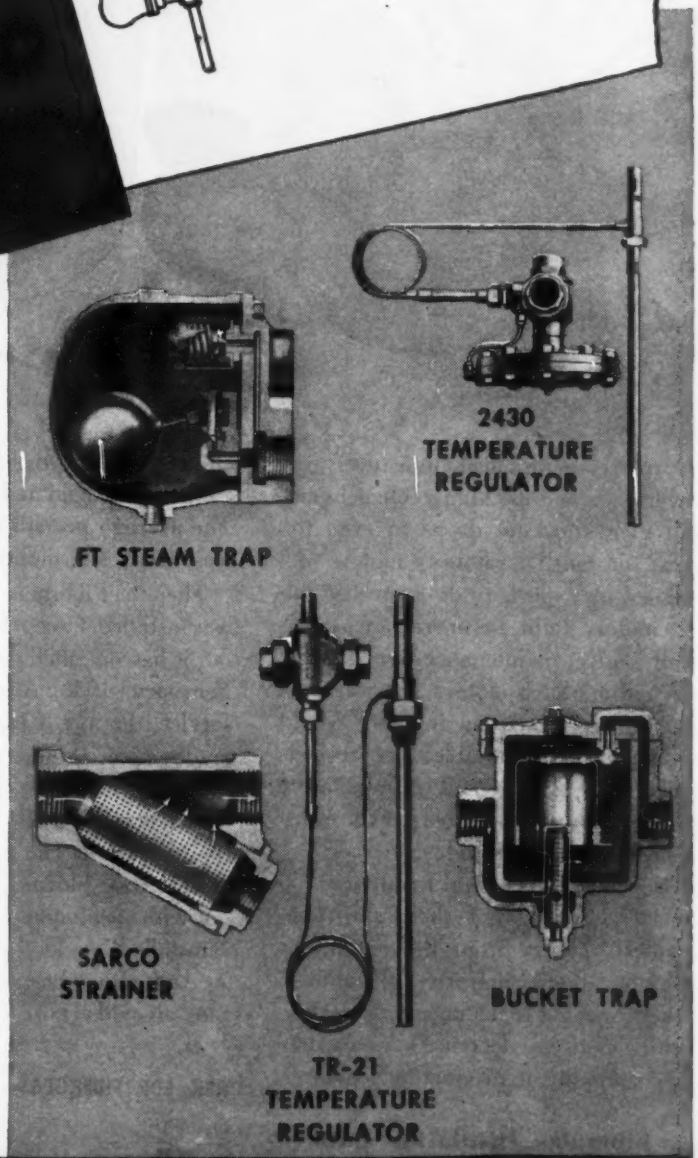
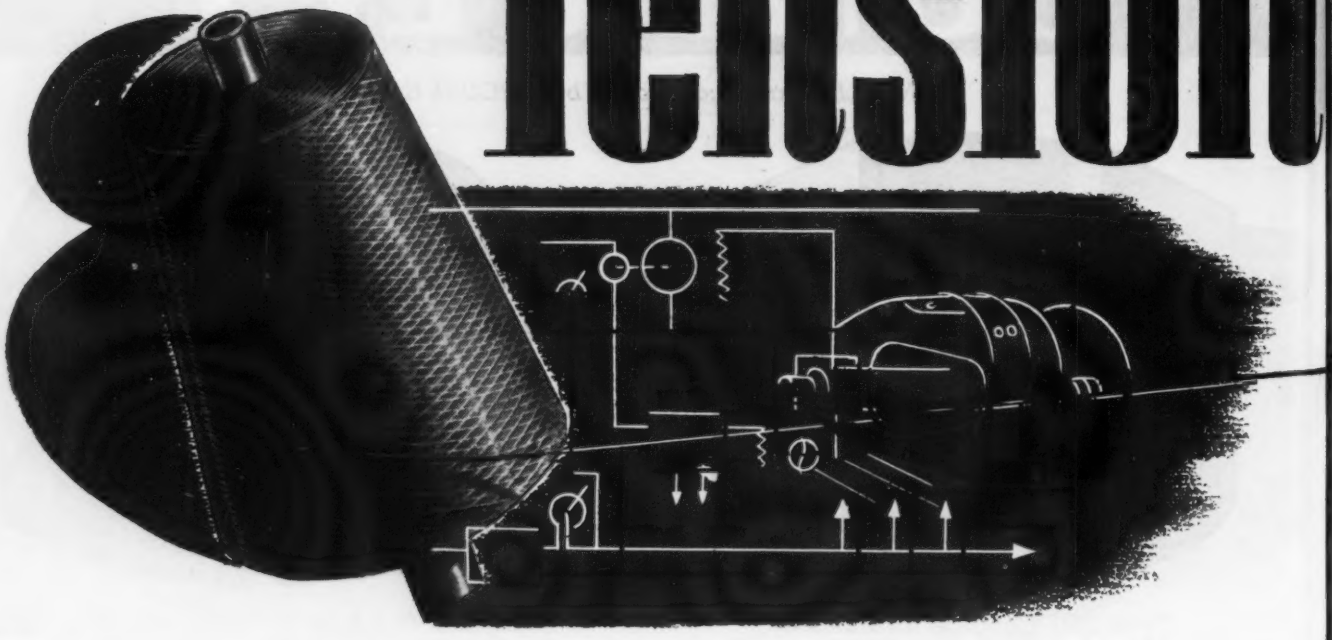
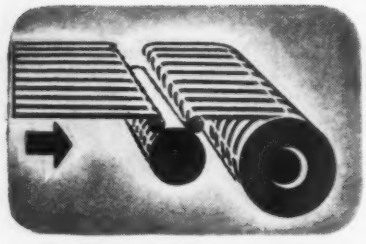


SARCO

Tension





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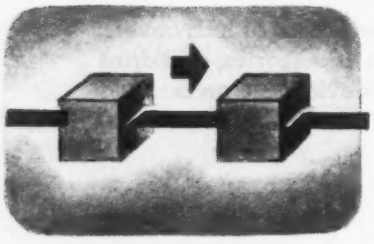

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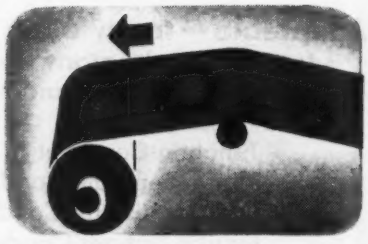

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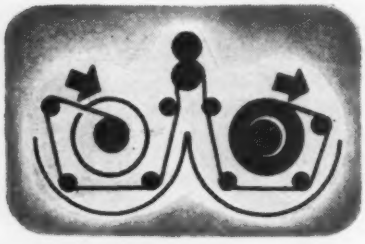

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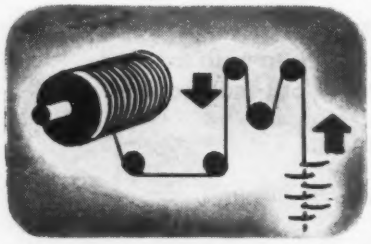

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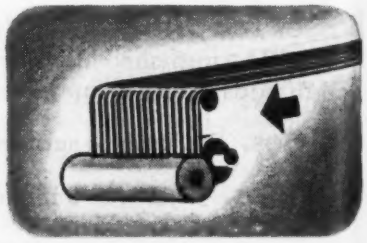

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Electrical Measurement vs. Human Judgment

Electrical measurement of tension is far more precise and consistent than the most experienced human's sense of touch. Moreover, it can be translated automatically into a continuous, accurate control of motor speed, torque, or power, to maintain the exact tension desired. The tension selected as best for any given grade of yarn or cloth can be set by simply turning a dial, and can always be duplicated accurately.

With the application of G-E automatic tension control, you will make subsequent operations easier and faster because you will be supplying a more uniform product. You will eliminate damage in preparatory processes, and in weaving or knitting and finishing. You will improve the quality of your end products.

Simpler Equipment—Less Maintenance

An important auxiliary benefit of automatic electrical tension control is the elimination of friction devices, gearing, and much other mechanical equipment. The electric devices employed require little attention and little specialized "maintenance know-how."

On the opposite page, we present a few applications of G-E automatic tension control. Subsequent advertisements will tell in detail how these and other G-E systems work. Also, G-E application engineers are at your service to show how these systems can be adapted to your specific equipment, or to work out new systems to solve your particular problems. *General Electric Company, Schenectady 5, N. Y.*

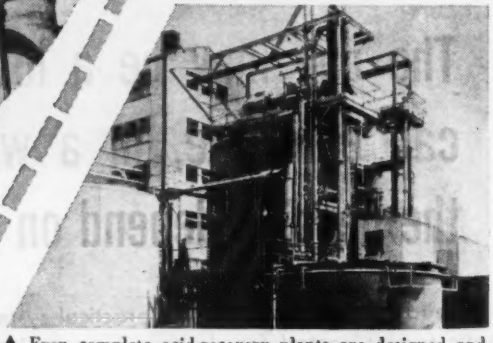
Buy all the BONDS you can—*and keep all you buy*

GENERAL ELECTRIC

661-21-8623

Make Acid Toe The Line

This precipitator for the abatement of industrial fumes near residential areas was installed by Derkiss Lead Burning Contractors, Linden, N. J. Chemical lead sheets, burned together and supported on skeleton steel frames, form the tanks. Total lead used, 41,000 pounds.



Even complete acid-recovery plants are designed and built by National Lead. These feature the patented Simonson-Mantius Process with its advantages of low temperature and high yield.

From Plant to Equipment to Pipe

Whatever you need in lead—*Go National.*

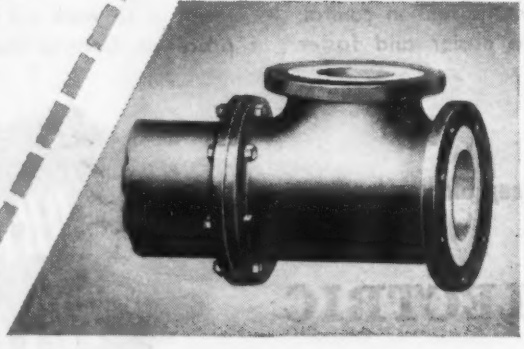
Do you need lead sheet, pipe, coils, valves, flanges, traps, bends? *Go National for Lead.*

Do you need chemical, antimonial, tellurium, or tellurium-antimonial lead? For example, do you need Tellurium Lead's corrosion resistance at elevated temperatures and its ability to withstand vibratory stress? *Go National for Lead.*

Do you need lead-lined or lead-covered acid valves, pipe, coils, or special lead-lined apparatus fabricated to specification? *Go National for Lead.*

Or do you require a complete sulfuric acid recovery plant, with everything supplied, from the plan right down to the last detail of construction? *Go National for Lead.*

Most important of all, do you need the years of experience which National Lead has accumulated from thousands of lead installations in every field handling corrosive solutions and gases? *Go National for Lead.*



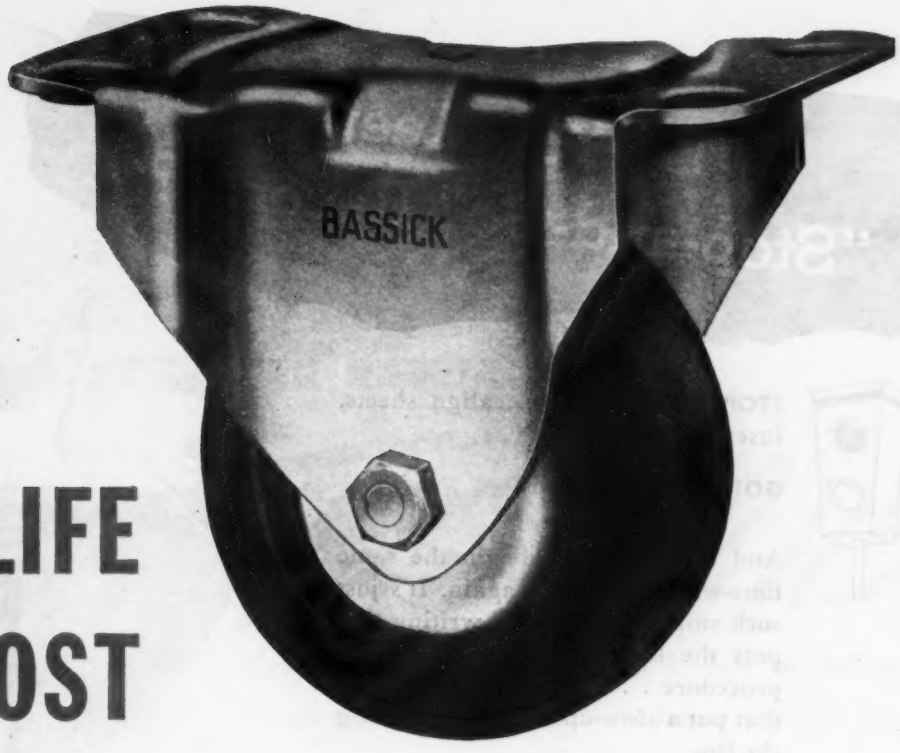
Where high steam pressure, vacuum, vibration, shock and rapid temperature change are encountered, as in evaporators, autoclaves, pressure stills, heating and cooling coils and agitators—look into our homogenous lead-lined or lead-covered equipment.

When high pressures plus corrosion must be licked, investigate National Lead's lead-lined pipe and fittings. Made of steel or iron, the pipe is lined with seamless chemical lead tube, bonded by our special "Tubond" process.

Go "National" for Lead

National Lead Company

111 Broadway, New York 6, N. Y. *Offices and Plants in Principal Cities and Canada*



LONGER LIFE LOWER COST

when they move on Bassick Casters

You'll save time in handling and give your materials and equipment the kinder treatment that protects against damage and wear and lengthens life.

The caster shown is Bassick's Series "38" — one of a series of steel stationary casters that have shock-absorbing resiliency and extra strength to withstand severe usage. Yet — rugged as it is — it's light and economical.

Note particularly the heavy-gauge steel horns, scientifically shaped to prevent bending or buckling. All Bassick steel casters are furnished standard with seamless steel spanner bushings for extra strength.

Thread guards which prevent clogging of wheels by fibres, lint or thread are important. Be sure to specify thread guards on all casters you buy.

Bassick offers the world's most complete line of casters and a degree of quality in materials and construction that is unsurpassed. Let Bassick Casters keep your materials *rolling*.

THE BASSICK COMPANY, Bridgeport 2, Conn. Division of Stewart-Warner Corporation. *Canadian Division*: Stewart-Warner-Alemite Corporation, Ltd., Belleville, Ont.

Making more kinds of Casters... Making Casters do more

Bassick

Do You Keep "Stop-and-Go" Records?

STOP! Juggle carbons, align sheets, insert the forms.

GO! Type the records.

And then stop and begin the same time-wasting process again. It's just such stop-and-go record writing that puts the kinks in modern business procedure . . . repetitive operations that put a slow-up on work all along the line.

Keep the typist typing

Keep the typist's fingers at the keyboard where they belong . . . with Uarco **continuous-strip** forms. These forms, already interleaved with carbon, automatically feed the typewriter . . . eliminate carbon fuss and bother, aligning trouble and wasteful inserting motions. Uarco **continuous-strip** record forms put an end to the "stop" in record writing.

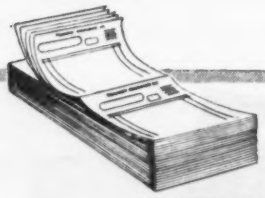
Uarco **continuous-strip** forms are scientifically designed to speed the flow of work by giving up-to-the-minute data on every business transaction. They lessen the possibility of error, eliminate duplication of effort and improve departmental co-ordination throughout the organization.

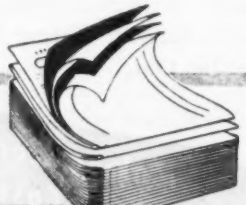
It will cost you nothing to have a Uarco representative call and work with you . . . help you co-ordinate your work with more efficient records. Call a Uarco business representative today . . . or write for further details.

UNITED AUTOGRAPHIC REGISTER COMPANY
Chicago, Cleveland, Oakland • *Offices in All Principal Cities*

AUTOGRAPHIC REGISTERS

SINGLE SET FORMS





CONTINUOUS-STRIP FORMS FOR HANDWRITTEN • TYPEWRITTEN • BUSINESS MACHINE RECORDS

UARCO

BETTER BUSINESS FORMS

PUTTING THE REPEL IN WATER REPELLENT

Paramul 115

Cyanamid's PARAMUL* 115 is one of the many "war-proven" chemicals with definite civilian goods advantages that offers opportunities for progress which can be turned to profitable account when application to normal production is permitted.

Cyanamid's PARAMUL 115 is now being used with highly satisfactory results on fabrics for outer wear as well as on fabrics for equipment purposes. It impregnates the fibers with wax without any stiffening effects. PARAMUL is easy and economical to apply and is stable over a wide range of temperatures from freezing cold to tropical heat. It may be stored safely over long periods of time. The services of our technical staff and research laboratories are at your disposal to achieve the best results in imparting water repellency and stain resistance to your fabrics with PARAMUL.

*Trade-Mark

When Performance Counts...Call on Cyanamid

PARAMUL 115 IS NOW AVAILABLE FOR GENERAL TEXTILE PROCESSING USE!

Order filled promptly. Write now for samples and full details on this war-proven Cyanamid development that offers a plus "in use" sales value to textile and hosiery lines.

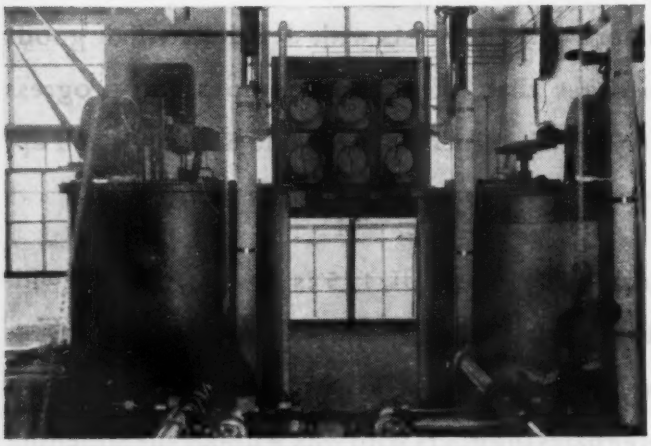
American CYANAMID & Chemical Corporation

(A Unit of American Cyanamid Company)

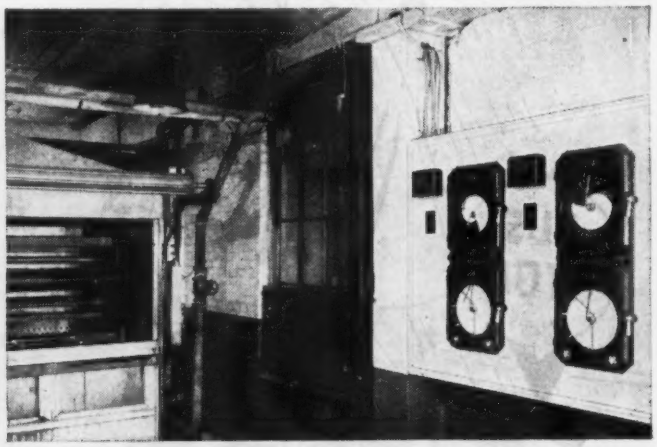
30 ROCKEFELLER PLAZA · NEW YORK 20, N. Y.

WHAT'S YOUR PROBLEM?

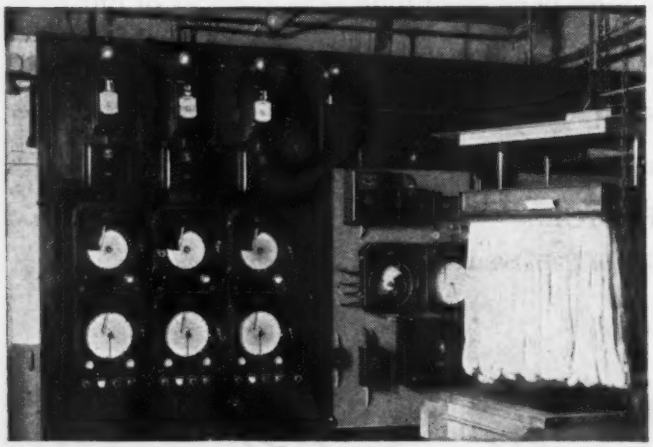
1 Want to stop worrying about temperature of raw stock in Franklin Process machines? Control it *automatically* with Taylor Fulscope Recording Temperature Controllers. We installed these years ago for a famous New England mill, and they're still going strong.



2 Want to cook size without overflowing or overboiling? Put in Taylor Fulscope *Time Schedule* Controllers. Once you have the ideal cooking schedule, you can reproduce it every time, with automatic control of time and temperature. All the operator has to do is load the kettle and push the button.



3 Want to save labor for more important jobs than watching temperatures on piece dye machines? Let Taylor Fulscope Time Schedule Controllers do it *automatically*. You'll find temperatures controlled to a degree not previously thought possible, and timing equally precise.



4 Want the last word in automatic control of yarn dyeing? This picture shows the latest Taylor setup contrasted with previous installation. One cam handles all schedules. Agitator motor always starts in reverse direction so hanks of yarn are unkinked immediately.

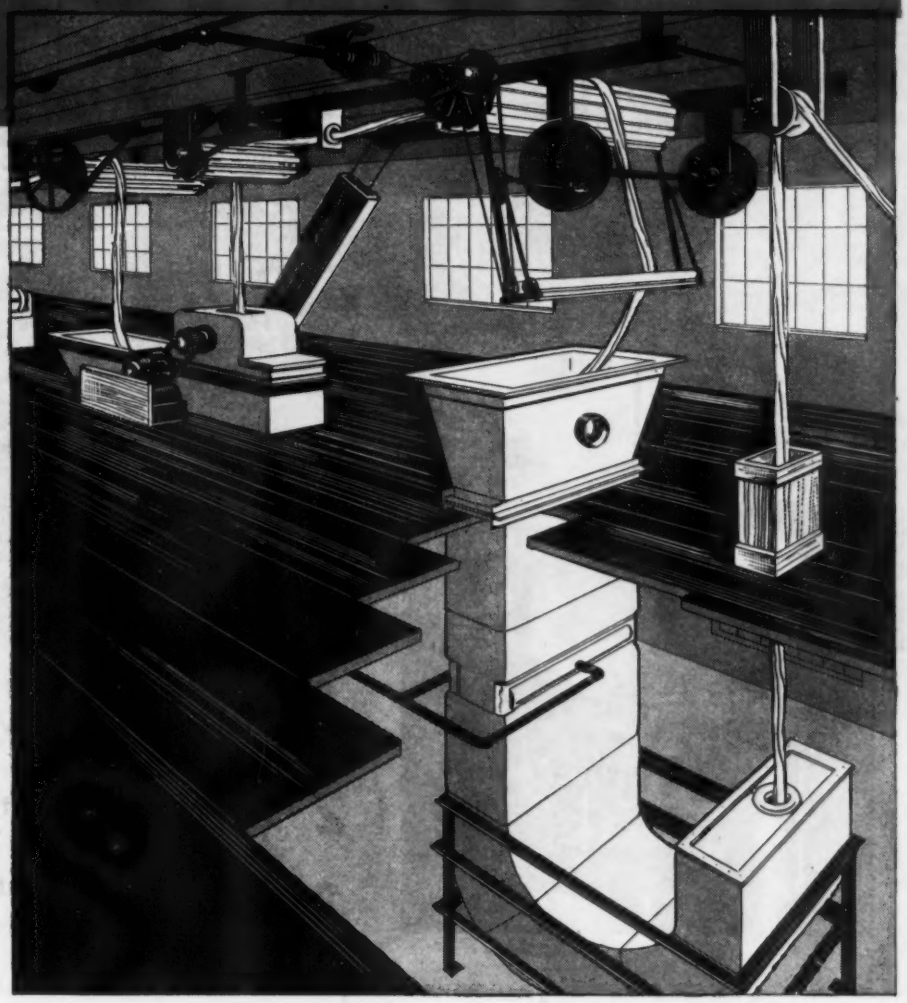
ARMY E NAVY

Taylor Instruments MEAN ACCURACY FIRST IN HOME AND INDUSTRY

5 Whatever your problem—the tougher the better—we'd like the chance to work out a Taylor Automatic Control system for you. Send for your Taylor Field Engineer or write Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada. *Instruments for indicating, recording and controlling temperature, pressure, humidity, flow and liquid level.*

What BECCO professional services did in this mill...

...can ALSO be done in Yours



"Nothing Moves but the Cloth"

Working under existing conditions, formulas were revised which effected immediate savings in time and a reduction in bleaching costs. At the same time plans were formulated to simplify the operating procedure. Later on when this company was ready to undertake the major changes proposed by Becco Engineers, necessary to simplify production, a straight-line production system was set up. This enabled them to be one of the first mills in the country to take full advantage of the newest development —steam bleaching. And now, their bleaching costs have been reduced very substantially.

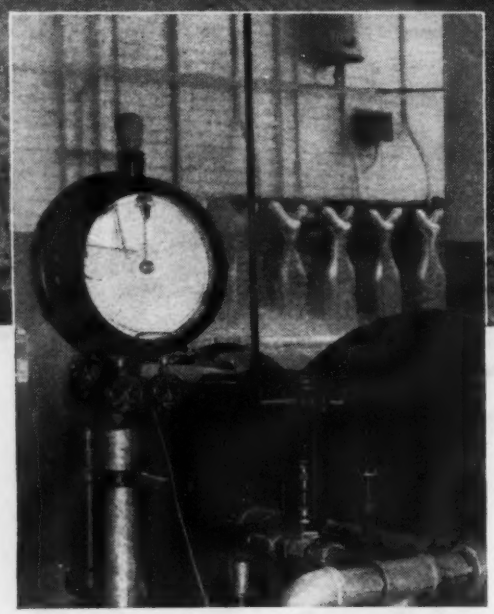
Such results, following Becco professional engineering and chemical services, can also be effected in your bleaching operations. Becco engineers and chemists have had many years of specialized bleaching and processing experience. Why not have one of them make a survey of your plant and have him advise as to the most efficient and economical method of bleaching, regardless of the amount of poundage you bleach. Write *today* to:

BECCO SALES CORPORATION

AGENTS FOR BUFFALO ELECTRO-CHEMICAL CO., INC., BUFFALO 7, N. Y.

New York Boston Philadelphia Chicago Charlotte

HERE'S DYEING CONTROL THAT'S AUTOMATIC 3 WAYS!



1 **Maintains correct temperature without hand manipulation of valves.**

2 **Accurately times the dye period.**

3 **Automatically shuts off steam and signals the operator.**

Each kettle in this modern dye-room is equipped with a Foxboro Elapsed-Time Controller that makes operation truly automatic!

All the operator needs to do is adjust two knobs for desired temperature and dyeing time. The controller does the rest . . . insures uniform dyeing; frees the operator for other duties; saves steam and dye additions: cuts re-dyes and rejects.

Foxboro Elapsed-Time Controllers are the simplest instruments of their kind. All three control functions are built into one compact case . . . with but a single motor to drive elapsed-time control and recording chart!

The same advantages these instruments bring to hosiery and piece dyers are also available for package, skein and rotary dyeing. Write for detailed information, mentioning rate of rise control if needed. **The Foxboro Company, 84 Neponset Ave., Foxboro, Mass., U. S. A.** Also Montreal, Canada.

FOXBORO REG. U. S. PAT. OFF. **DYE VAT CONTROL**

From bale to bolt General's "Quality" Dyestuffs and Auxiliaries are important links in the long chain of textile processing that assure Better Fabrics at Lower Costs.

GDC

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GENERAL DYESTUFF CORPORATION

L. F. Dommerich & Company

Executive and General Offices

271 MADISON AVENUE
NEW YORK, N. Y.

Telephone AShland 4-8650

FACTORS

For Manufacturers and Merchants

Inquiries as to our services solicited

●

ESTABLISHED 1840

Behind the Scenes See how the

H & D package laboratory operates "behind the scenes." A typical product, never before packaged in corrugated, enters the laboratory. How H & D Package Engineers proceed with the design, development and testing of an engineered corrugated shipping box is photographically recorded, scene by scene. If you're interested in packaging, you'll want to see this detailed backstage presentation of the H & D package laboratory at work.

TAKE A LOOK AT PACKAGING IN ACTION

• Look at packaging from "behind the scenes." Go along with a Package Engineer while he designs an engineered shipping box. To get a better understanding of the science of package engineering, send for your copy of H & D's book, "Behind the Scenes at the H & D Package Laboratory." Write today.

Hinde & Dauch

AUTHORITY ON PACKAGING

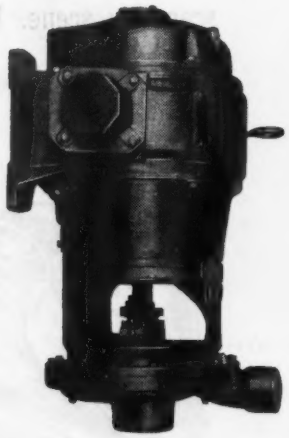
THE HINDE & DAUCH PAPER COMPANY, 4530 DECATUR STREET, SANDUSKY, OHIO

Factories in BALTIMORE • BOSTON • BUFFALO • CHICAGO • CLEVELAND • DETROIT • GLOUCESTER, N. J. HOBOKEN • KANSAS CITY • LENOIR, N. C. • MONTREAL • RICHMOND • ST. LOUIS • SANDUSKY, OHIO • TORONTO

Which side is UP?

Any side is up . . . when it's a Gardner-Denver Close-Coupled Centrifugal Pump. For this versatile pumping unit can be installed anywhere . . . either horizontally or vertically . . . on floor, wall or ceiling.

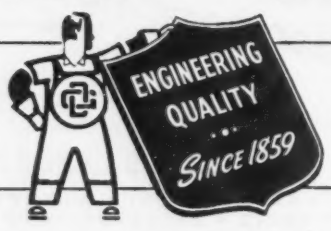
Pump and motor are combined into a single efficient unit, ready for installation . . . a masterpiece of compact design. And regardless of position, they operate economically and effectively. For convenience of installation, discharge nozzles can be turned in any one of eight different positions.



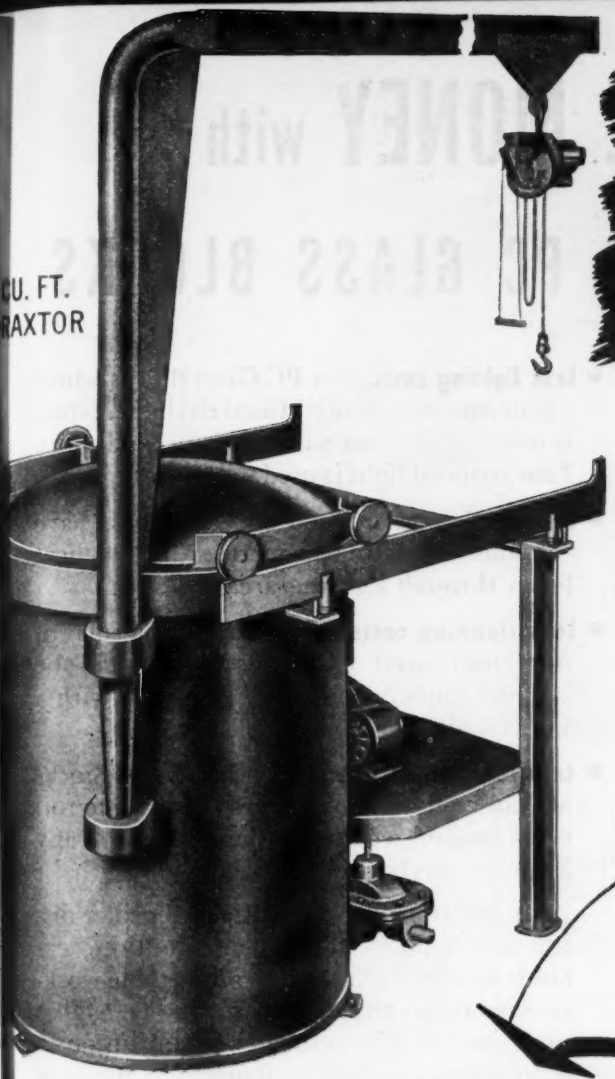
OTHER PUMPING ADVANTAGES

1. Water passages and impeller blades are carefully proportioned for efficient operation.
2. Vital parts cast in GarDurloy for greater strength.
3. Splash-proof, explosion-proof motor available if desired.
4. Capacities range from 30 to 1200 gallons per minute.

For complete information, write for descriptive bulletin. Gardner-Denver Company, Quincy, Illinois; Atlanta, Ga.; Birmingham, Ala.; Boston, Mass.; Hazleton, Pa.; Knoxville, Tenn.; Washington, D. C.; New York, N. Y.; Philadelphia, Pa.; Pittsburgh, Pa.



GARDNER-DENVER



IT IS TIME TO CHANGE FROM BUYING EXTRACTORS BY SIZE TO BUYING BY CUBICAL CAPACITY *per hour...*

The remarkable New Zephyr HYDRAXTOR is guaranteed to produce more work per hour, based on same degree of moisture, than any extractor now on the market—*irrespective of size or price.*

HYDRAXTOR HIGHLIGHTS:

Remarkable time and labor saver—field tests prove 50% to 75% time savings per extractor load; actual loading and unloading time only 30 seconds each; cycle of operation 8 loads per hour • No noise or vibration • Absolute safety • Easy to install and maintain • Never needs balancing • No moving parts • Minimum horsepower required • Small standard motors • Cannot tear or damage clothes • No hard dried extractor wrinkles • Uniformly successful on all types of work.

All ZEPHYR HYDRAXTORS will now be sold at SO MANY CUBIC FEET per hour or SO MANY LOADS per hour...

	LOAD	RUN	UNLOAD	LOADS PER HOUR	Approx. CAPACITY PER HOUR	POWER START	POWER RUN
ZEPHYR HYDRAXTOR	30 SEC.	5 MIN.	30 SEC.	8 LOADS PER HOUR	120 CU. FT. OF CLOTHES PER HOUR	10 AMP.	5 AMP
STANDARD 48" EXTRACTOR	3 MIN.	15 MIN.	3 MIN.	2.5 LOADS PER HOUR	54.6 CU. FT. OF CLOTHES PER HOUR	70 AMP.	10 AMP
MECHANICAL UNLOADING EXTRACTOR	30 SEC.	15 MIN.	30 SEC.	3.8 LOADS PER HOUR	81.99 CU. FT. OF CLOTHES PER HOUR	105 AMP.	15 AMP

The New Zephyr HYDRAXTOR Represents the First New Method in the Extracting Field for the Past 50 Years

BUY MORE WAR BONDS

PEACE TIME DESIGNERS AND BUILDERS OF . . .

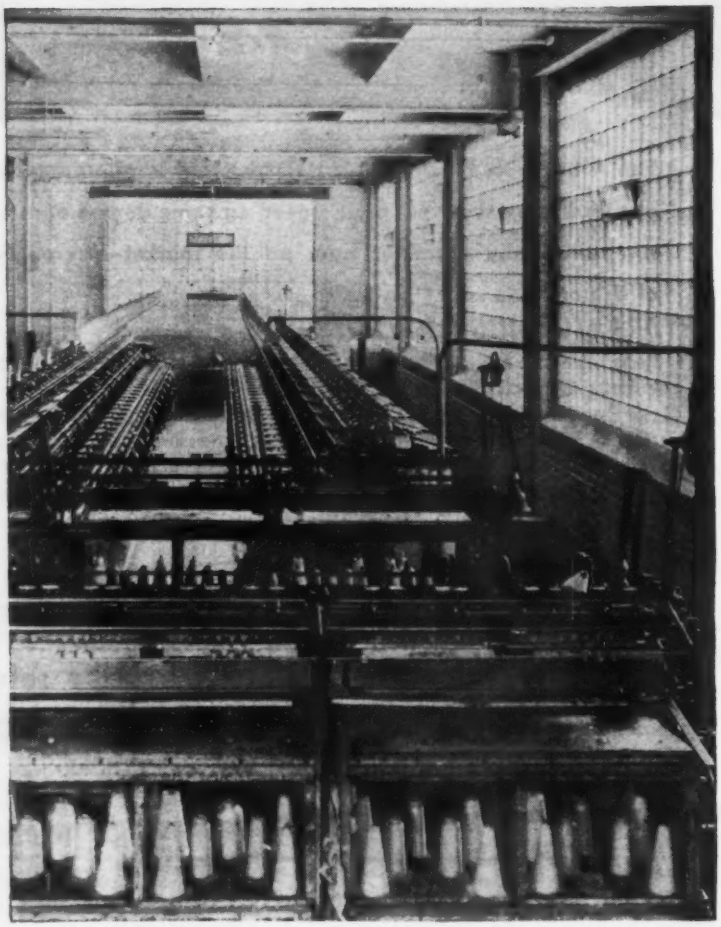
"HI-SPEED" WASHERS
"UNA-RETURN" IRONERS
DUO "GLIDE" IRONERS
"NO-BAK" ADDITION

ZEPHYR

LAUNDRY MACHINERY COMPANY

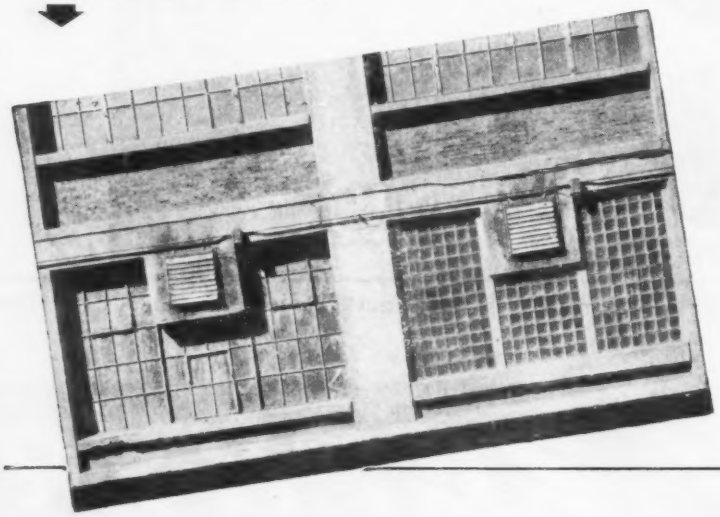
2034-54 W. FULTON STREET, CHICAGO 12, ILLINOIS

FOUR WAYS YOU SAVE MONEY with PC GLASS BLOCKS



Many textile plants are air-conditioned, to insure continuous operation of finely adjusted machinery. In order to keep temperature and humidity at desired levels without excess cost, many plants are lighted with large panels of PC Glass Blocks.

Replacing ordinary sash with PC Glass Blocks in this big carpet mill increases operating efficiency. Even under the extreme conditions encountered in dyehouses, where high, acid content atmospheres and excessive humidity result from washing, dyeing and bleaching, the glass block panels do not pit, check, rot or crack. Many an installation of PC Glass Blocks has paid for itself with the money saved on heating, lighting, machine repairs, spoilage, repairs, maintenance and cleaning costs.



- **Less lighting costs.** For PC Glass Blocks admit a generous supply of diffused daylight, direct it over wider areas where it is needed most. Less artificial light is used.
- **Less heating costs.** For PC Glass Blocks have valuable insulating properties, reduce heat losses through lighting areas.
- **Less cleaning costs.** For large panels of smooth-surfaced PC Glass Blocks can be cleaned quickly and easily by a man with a long-handled brush.
- **Less replacement costs.** For PC Glass Blocks are not easily broken. There is no sash to rot, crack, rust or need repainting. Repairs of any kind are rarely needed.

In addition, PC Glass Blocks deaden distracting sounds, lessen condensation, exclude dust and grit. Clean comfortable workrooms protect the health of workers, enable precision machinery to operate continuously at top efficiency, reduce damage to goods in process.

These are some of the reasons why PC Glass Blocks are in increasing demand for new construction and plant modernization. They come in a wide range of designs and sizes. Pittsburgh Corning Corporation, Room 726, 632 Duquesne Way, Pittsburgh 22, Pennsylvania.

• Also makers of PC Foamglas •

PITTSBURGH PC CORNING

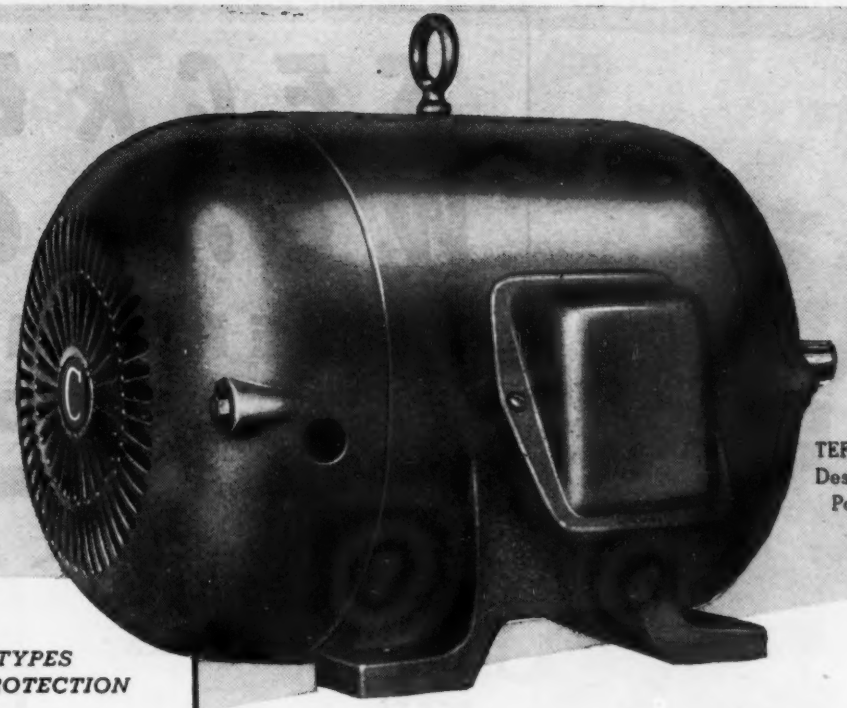
GLASS BLOCKS

Distributed by

PITTSBURGH PLATE GLASS COMPANY

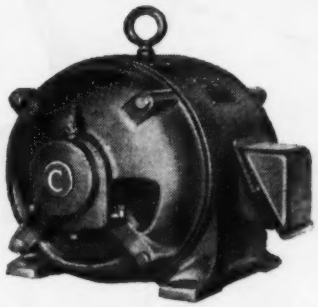
and by W. P. Fuller & Co. on the Pacific Coast

PITTSBURGH CORNING CORPORATION
632 DUQUESNE WAY, PITTSBURGH 22, PA.

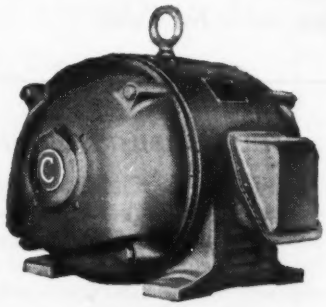


TEFC—Protects Against Destructive Dust, Grit, Powdered Materials

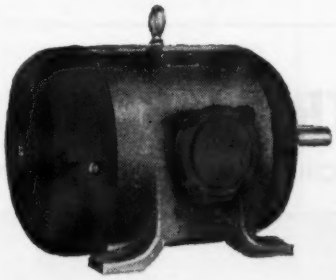
3 OTHER TYPES OF PROTECTION



Form J
General Purpose Application



Splash Proof Protection



Century Explosion Proof Motor

FOR PROTECTION Against Atmospheres That Contain Acid and Alkali Fumes – Abrasive Dusts

Use Century TEFC Motors

Century Totally Enclosed Fan Cooled motors are designed to operate continuously in abnormal atmospheres found in chemical and processing plants.

They provide protection against atmospheres containing acid and alkali fumes, oil or animal fats, coolant solutions, metallic, abrasive, and other destructive dusts, grit, and powders.

Where atmospheres are charged with high concentrations of destructive fumes, Century TEFC motors can be provided with special insulations.

Why not find out how Century TEFC motors can help you avoid production delays and help achieve continuous, economical performance? Call in a Century engineer.

Century C MOTORS

CENTURY ELECTRIC CO.
1806 Pine Street, St. Louis 3, Missouri
Offices and Stock Points in Principal Cities

383

SECRET WEAPON OVERCOMES HIDDEN COSTS

WEIGHS · COUNTS · BATCHES · MEASURES · TESTS · · ·

The improved KRON springless ball-bearing dial mechanism is industry's secret weapon in the war against *hidden costs* in production weighing operations. Designed to determine true weight quickly and accurately in a simple "load and look" procedure, it saves materials, conserves time and eliminates mistakes.

Precision-engineered around this unique dial mechanism, every KRON scale is reliable, fool-proof—assures unfailing accuracy and durability under all conditions of use. It provides the full capacity to weigh, count, measure and batch with an irreducible minimum of lost time and waste motion.

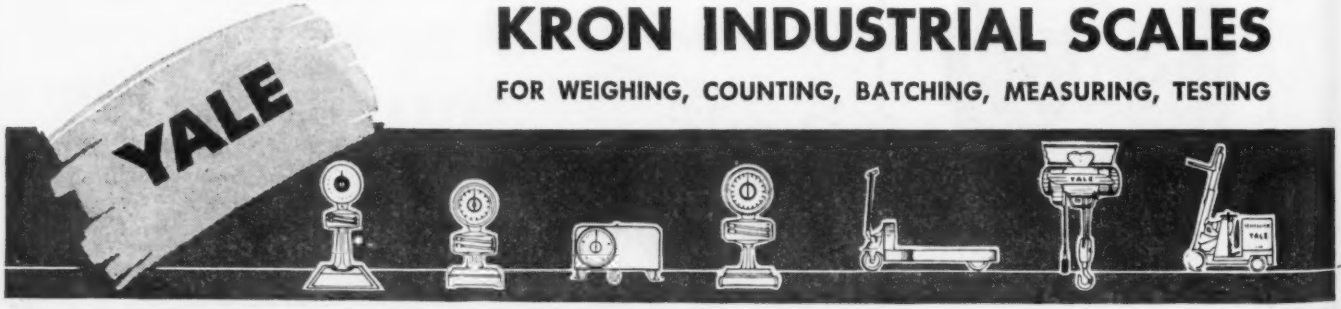
If you have a materials handling problem in high-cost weighing, investigate the benefits of reliable, long-life KRON scales. Write to The Yale & Towne Manufacturing Company, Philadelphia Division, Philadelphia 24, Pa., for your copy of the new catalog of KRON scales made by Yale.

... FULL VISIBILITY ASSURED!

Found only on KRON scales, the exclusive swivel dial head assures full dial chart visibility for accurate readings—eliminates point-of-view differences. Dial head can be rotated through a complete 360° arc at will.

KRON INDUSTRIAL SCALES

FOR WEIGHING, COUNTING, BATCHING, MEASURING, TESTING



MATERIALS HANDLING MACHINERY: TRUCKS—HAND LIFT AND ELECTRIC • HOISTS—HAND AND ELECTRIC

MORE FORD TRUCKS ON THE ROAD • ON MORE JOBS • FOR MORE GOOD REASONS

TRUCK-ENGINEERED FOR Easy Service

HOW FORD TRUCKS SAVE YOUR SERVICE DOLLARS

Check these owner-economies and advantages which Ford Truck Engineering provides:

Engine easy to service ■ Removable connecting rod bearings ■ Alloy valve seat inserts that reduce grinding frequency ■ Valve lifters that require no adjustment ■ Dual water pumps, self-lubricating and packless ■ Heavy-duty clutch and transmission, easy to remove ■ Self-aligning drive shaft bearing ■ Large hydraulic brakes, easily and positively adjusted ■ Large spindles and spindle pins ■ Heavy front axles ■ Large tapered wheel bearings ■ Heavy-duty full-floating rear axles, permitting removal of axle shafts without jacking ■ Straddle-mounted pinion ■ TWO-SPEED AXLES AVAILABLE.

Ford

FORD truck engineering has always had three main goals: better performance and endurance, lower cost and easy, thrifty servicing.

Certainly, Ford Trucks perform well. That's why there are more than a million Ford Truck owners! And the relatively low price of a Ford Truck commends it to every businessman who watches his dollars. As to servicing—

Read, at the left, the plain evidence of how Ford engineering saves your time and your money. And bear in mind that Ford high-precision manufacture, founded on accuracy standards measured in millionths of an inch, provides a better truck to begin with, and makes installation of new parts quick and easy, keeping costs down.

Today, truck servicing means more than ever before—and after the war the importance of Ford low maintenance costs will be still greater.

Under U. S. Government allocation, present production of Ford Trucks is necessarily limited, as to types, quantities and equipment, for essential civilian needs. See your near-by Ford Truck dealer for friendly counsel in obtaining official certification of your requirements.

• • •

"THE FORD SHOW." *Brilliant singing stars, orchestra and chorus. Every Sunday, NBC network. 2:00 P.M., E.W.T.; 1:00 P.M., C.W.T.; 12:00 M., M.W.T.; 11:00 A.M., P.W.T.*

FORD TRUCKS

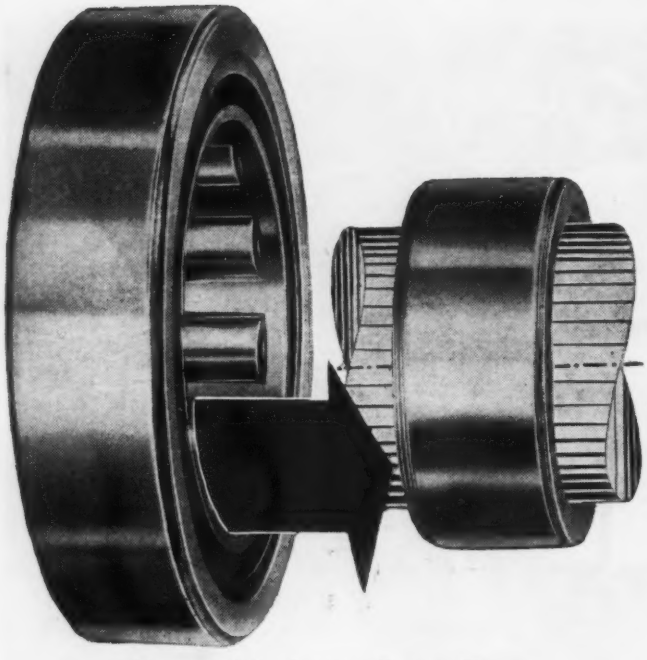
AND COMMERCIAL CARS

TRUCK-ENGINEERED • TRUCK-BUILT • BY TRUCK MEN

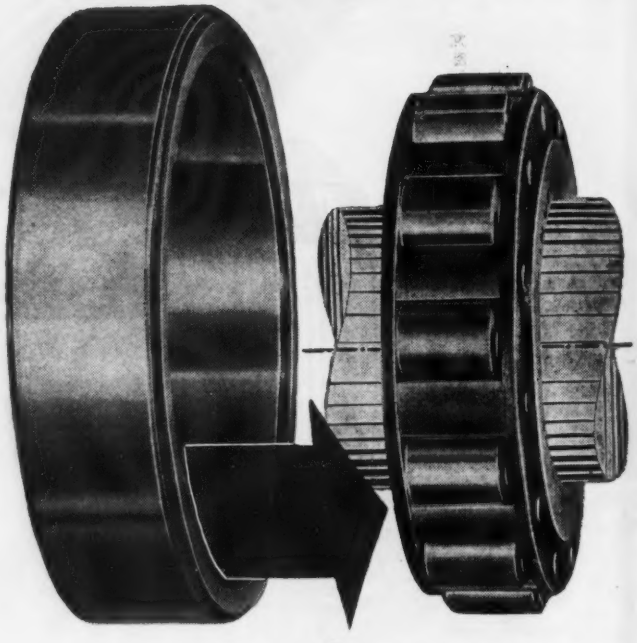
SIMPLICITY in machine design

and complete interchangeability of component parts

BEARINGS: HYATT



Separable Inner Race Type

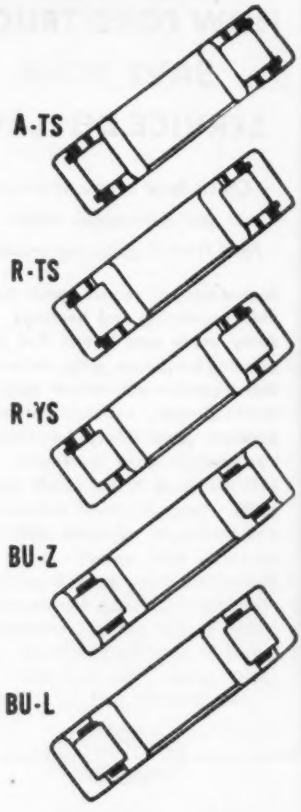


Separable Outer Race Type

Hyatt Hy-Load Bearings are made in separable types as well as in self-contained units. In the separable bearings the inner races are the separable units in one instance and the outer races in the other. Thus, the component parts of every separable Hyatt Hy-Load type bearing of a given size are fully interchangeable. Every race fits every roller assembly.

Separable races may be assembled in one part of the shop and the rest of the bearing in another. When the sub-assemblies are brought together on the final assembly line the component bearing parts will fit correctly. No selection or matching required.

Every Hyatt A-TS, R-TS, R-YS, BU-Z and BU-L type bearing has this feature—and many others. Write for data.



HYATT BEARINGS DIVISION · GENERAL MOTORS CORPORATION

HARRISON NEW JERSEY · CHICAGO · DETROIT · PITTSBURGH · OAKLAND, CALIFORNIA

Palletizing WITH ADHESIVES

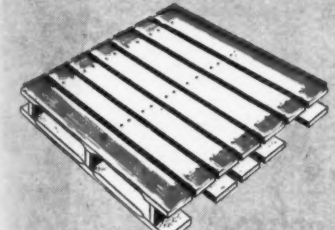
EXCLUSIVE!

PALLET ADHESIVE # 4 was formulated in collaboration with military authorities. It is the first adhesive to be tested and approved for unitizing corrugated or solid fibre shipping containers on standard wooden pallets. Its high shear strength locks the unitized load during shipping; its low tensile strength permits easy unit separation during unloading — with a minimum of tearing that leaves the cases fit for reuse. Adhesive palletizing is now being adapted to wooden boxes.

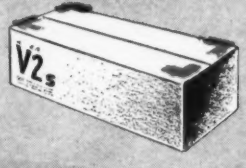
SAVES
Steel
Labor
Time
Containers

PREVENTS
Break-up
Damage
Pilferage

EASY TO APPLY



PALLET ADHESIVE # 4 is applied by brush around the perimeter of the pallet. Then the first layer of cartons is placed in position.



An L-shaped strip of adhesive is then applied to the top corners of each carton — to lock the succeeding layers in place.

Now SPEEDS MULTIPLE-UNIT WAR DELIVERIES

All war contractors—large or small—can now make palletized shipments *whether or not* they are equipped with special tools for steel strapping and mechanical handling equipment.

A fast-setting, mold-proof, brush applied adhesive . . . National's PALLET ADHESIVE #4 . . . permits unit loading either inside the plant at the delivery conveyor — *or directly on pallets in the freight car or delivery truck.*

Domestic shipments to prime contractors equipped with fork-lift trucks — or to the home depots of the Services *need no further binding.*

Overseas shipments can be 3-strapped (instead of 6-strapped) by the Services at ports of embarkation or by specially equipped contractors.

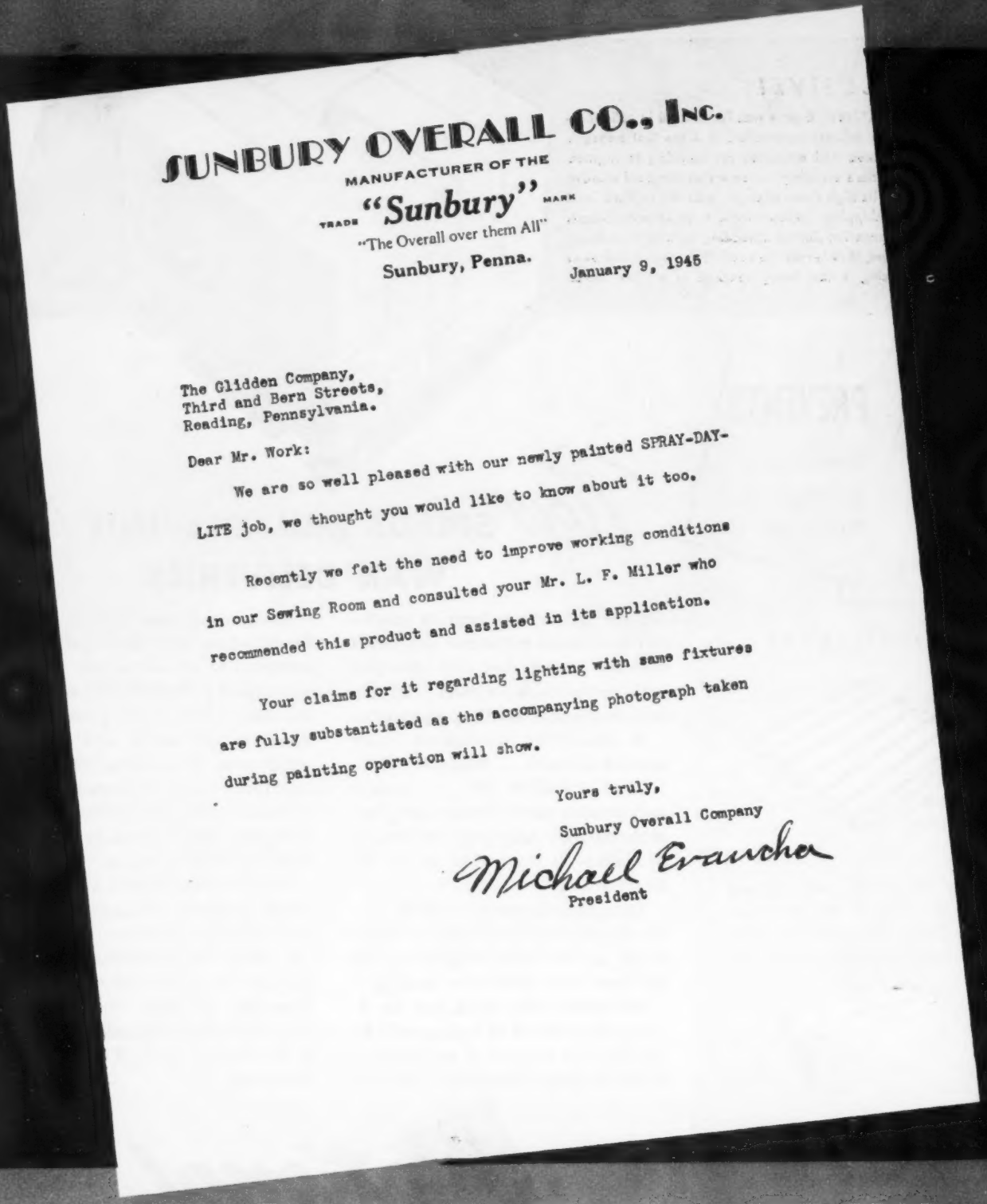
Government specifications calling for palletized units are rapidly being extended to all contractors. The advantages of palletizing with adhesives are many: Unit loading saves time, labor, critical metal and handling equipment. Rehandling caused by load break-up is eliminated. Damage in transit is lessened. Pilfering is discouraged. And savings in container costs are made possible.

Further information is available NOW! Address: National Adhesives, 270 Madison Avenue, New York 16; 3641 So. Washtenaw Avenue, Chicago 32; 735 Battery Street, San Francisco 11, and other principal cities. In Canada: Meredith, Simmons & Company, Ltd., Toronto and Montreal.

National ADHESIVES

EVERY TYPE OF ADHESIVE FOR EVERY TYPE OF ADHESION

Overall maker has high praise for over-all painting results with . . .



SUNBURY OVERALL CO., INC.

MANUFACTURER OF THE

TRADE "Sunbury" MARK

"The Overall over them All"

Sunbury, Penna. January 9, 1945

The Glidden Company,
Third and Bern Streets,
Reading, Pennsylvania.

Dear Mr. Work:

We are so well pleased with our newly painted SPRAY-DAY-LITE job, we thought you would like to know about it too.

Recently we felt the need to improve working conditions in our Sewing Room and consulted your Mr. L. F. Miller who recommended this product and assisted in its application.

Your claims for it regarding lighting with same fixtures are fully substantiated as the accompanying photograph taken during painting operation will show.

Yours truly,

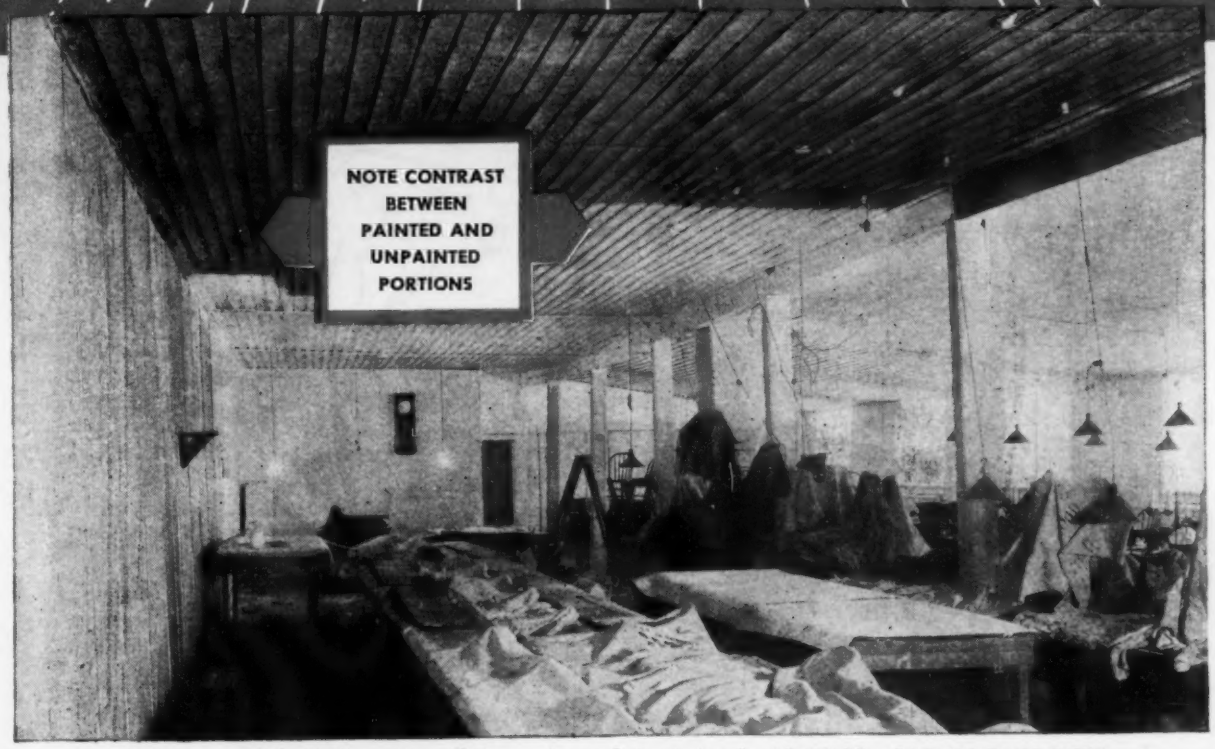
Sunbury Overall Company

Michael Evancho

President

GLIDDEN

SPRAY-DAY-LITE



Sewing room of the Sunbury Overall Co., as it was being painted with Glidden SPRAY-DAY-LITE

Famous Glidden maintenance paint creates better working conditions through improved lighting

Sunbury Overall Company, in letter at left, mentions particularly the improvement in its lighting after painting with Glidden SPRAY-DAY-LITE. *Wherever* it is used, this amazing oil enamel maintenance paint increases lighting efficiency to better working conditions. But here are other important SPRAY-DAY-LITE advantages you should know about . . .

1. One coat of SPRAY-DAY-LITE equals conventional two-coat results.
2. Provides smooth, solid covering over grimy, dirty and badly discolored surfaces.
3. Can be applied to concrete, tile, masonry, plaster, steel, stucco and wood.
4. Intensely white. Does not yellow with age.
5. Also available in 10 beautiful colors.
6. Egg-shell finish eliminates eye-straining glare—washes like tile.
7. Will not flake, crack, chip or peel—gives 3 to 8 years service.
8. Produces little fog or mist in application.
9. Can be either brushed or sprayed—free from sags and runs.

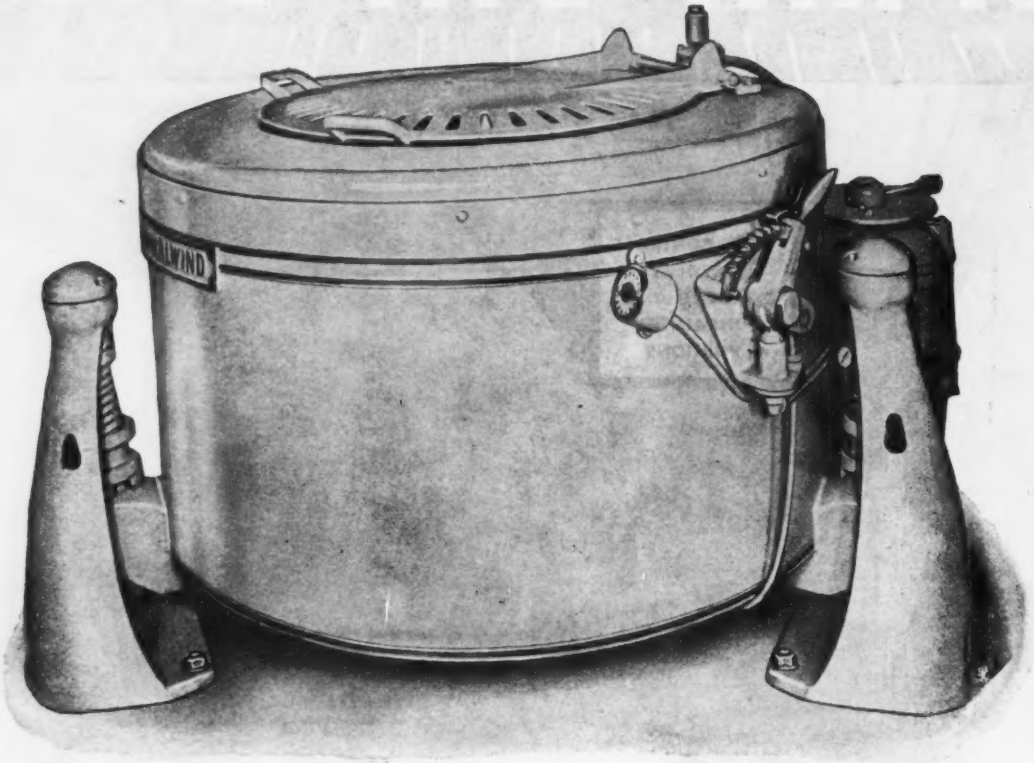
Ask for a demonstration of SPRAY-DAY-LITE paint illumination by a Glidden engineer in your own plant. No cost or obligation. Write also for the new SPRAY-DAY-LITE Color Chart which will help you visualize a wide range of attractive color combinations.

TIME-TESTED

THE GLIDDEN COMPANY · Cleveland 2, Ohio

Pacemaker in Paints

BETTER EXTRACTION . . . WITH FEWER EXTRACTORS



Yes, the Fletcher "Whirlwind" Extractor does it *better* with *less*. The secret is *extra* speed which is due to these Five Fletcher Features . . .

1—Designed for shorter loading time.

2—Smooth, extra fast acceleration enables the Fletcher to attain maximum speed in the shortest possible time.

3—Actual running time cut almost in half. The High-Speed "Whirlwind" is designed and constructed to give 1000 RPM with a 48" diameter basket.

4—Automatic hydraulic brake and finger-tip control brings the Fletcher to a quicker stop than is usual.

5—Easier and *faster* unloading.

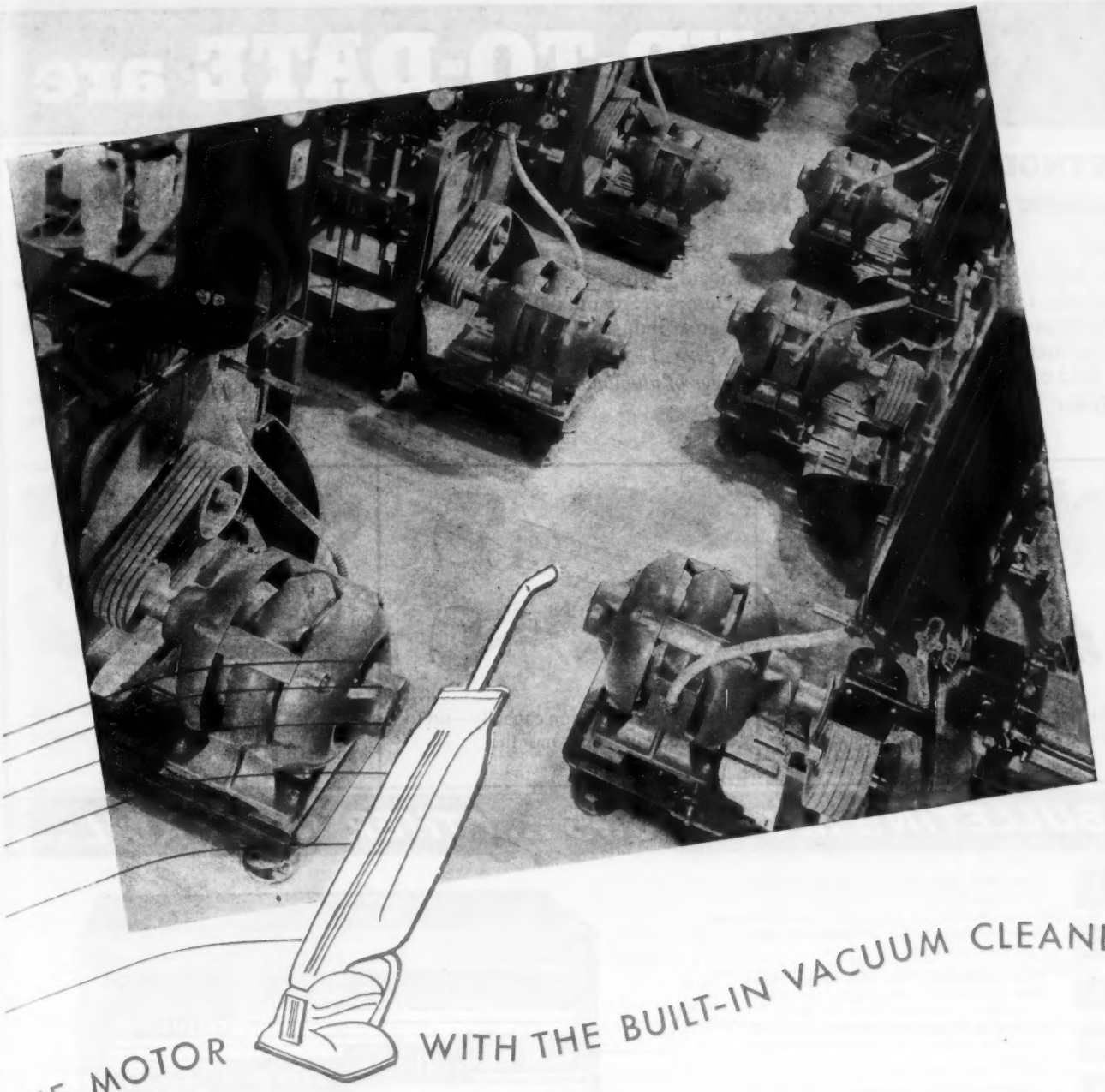
It all adds up to this—more thorough extraction *faster*, means fewer extractors to get out a given volume of work. Let us send you our Bulletin 52-B which describes the Fletcher "Whirlwind" with regular speed. Full details of the "High Speed Whirlwind" in Bulletin 53.

Other Fletcher products include the "Victory" Loom, the "Apex" Twister and numerous additional types of Extractors, Narrow Fabric Looms, Throwing Machinery, Spindles in the textile equipment line. We'll be glad to send you bulletins, advice on installations and keep you informed of new developments. Just write us on your letterhead.

FLETCHER "WHIRLWIND" EXTRACTOR

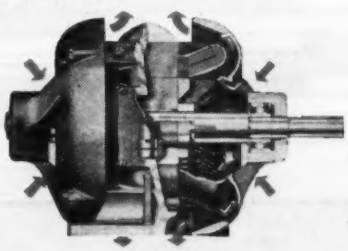
. . . THE ALL AROUND EXTRACTOR

FLETCHER WORKS GLENWOOD AVE. & SECOND ST., PHILA. 40, PENNA.



THE MOTOR WITH THE BUILT-IN VACUUM CLEANER

Here's how the Lint-Free Motor cleans itself. This simple construction will cut your maintenance costs—and your repair parts needs. Get the complete facts—write for folder B-3515.



Your wife might not recognize the vacuum cleaner in a Lint-Free Motor. But she'd *see* the results. Instead of *collecting* lint, these motors suck it in—through—and *out—fast*—to keep running cool and *clean*.

It's all done with tubes—six of them, bent into the shape of a motor frame. These tubes set up a partial vacuum that keeps lint on the move.

That's why we call these motors *Lint-Free*. They're built to give you more production with less maintenance. Westinghouse Electric & Manufacturing Co., P. O. Box 868, Pittsburgh 30, Pa.

J-21322

Westinghouse

PLANTS IN 25 CITIES . . . OFFICES EVERYWHERE

LINT-FREE MOTORS

How UP-TO-DATE are

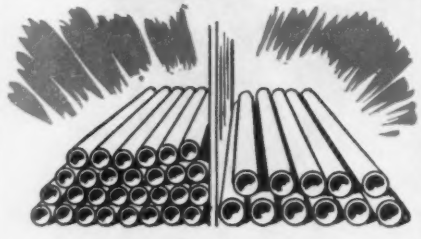
REYNOLDS:
Answer to Industry's No. 1 Question

Today . . . With R301 and the other new high-strength alloys, aluminum combines light weight, corrosion-resistance *and great strength* . . . extends farther and farther the rapidly widening field of its usefulness.

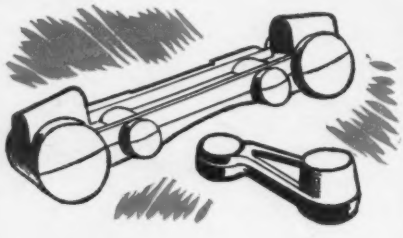
Today . . . To known prewar facilities Reynolds adds a great new independent source of supply and service . . . mines . . . manufacturing plants in the great industrial areas.

Never again need America face the danger of aluminum scarcity and high prices.

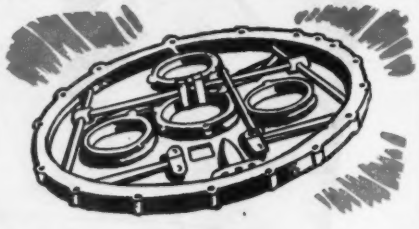
Sheet and Plate. Standard gauges, sizes and alloys. Many special items.



Tubing. Seamless. Closely controlled as to quality and dimensions.



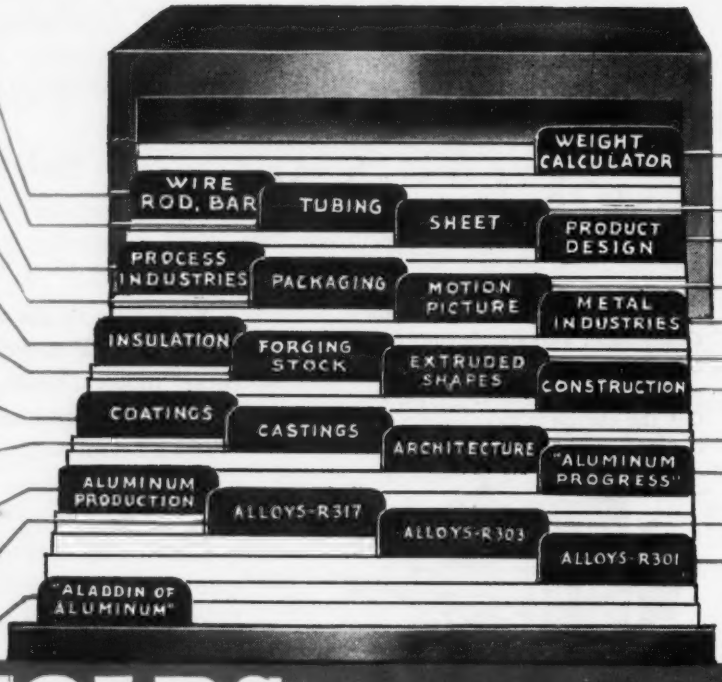
Forgings. Production capacity—up to 2,000,000 units per month.



Castings. Permanent mold and sand. Produced in one of industry's most modern plants.

BULLETINS . . . CATALOGS . . . OTHER MATERIAL . . .

1. **Wire, Rod, Bar.** (Bulletin 31-A.) Specifications, ordering data, etc. 12 pages.
2. **Tubing.** (Bulletin 17-A.) Specifications, ordering data, etc. 8 pages.
3. **Process Industries.** "Reynolds Aluminum, its New Importance in Processing Operations." (Catalog 102.) 8 pages. (Now on press.)
4. **Packaging.** Bulletin on protective metal packaging for military and civilian application. 4 pages.
5. **Insulation.** Bulletin on types and applications of reflective metal insulation.
6. **Forging Stock.** (Bulletin 23-A.) Ordering data. 8 pages.
7. **Coatings.** Forms, applications, evaluation, etc. Powders and Pastes. (Bulletin 21-A.) 20 pages.
8. **Castings.** Descriptive bulletin of Reynolds facilities for sand and permanent mold castings. (On press.)
9. **Aluminum Production.** "From Bauxite to Rolled Metal," story and flow diagram of world's only complete aluminum plant. 8 pp.
10. **Alloys—R317.** A new free machining strong aluminum alloy.
11. **"Aladdin of Aluminum."** A Reader's Digest reprint, giving background story of Reynolds growth.



REYNOLDS METALS

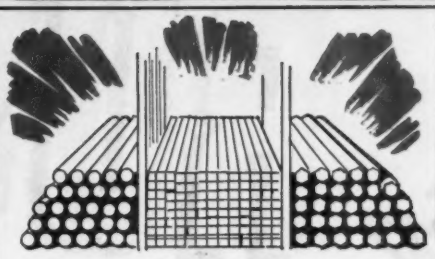
REYNOLDS ALUMINUM

The Great New Source of

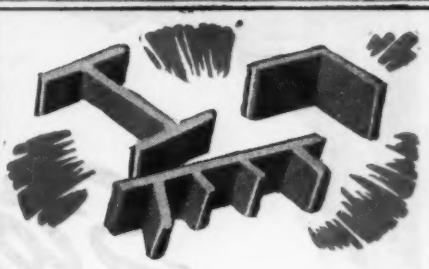
INGOT • SHEET • SHAPES • WIRE • ROD • BAR • TUBING • PARTS • FORGINGS • CASTINGS • FOIL • POWDER

you on ALUMINUM?

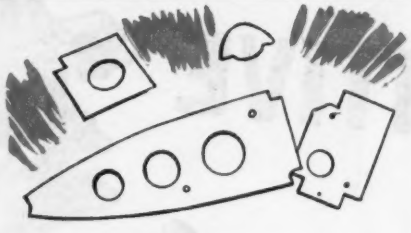
Wire. Cross-sections less than ⅜ inches. Also finished rivets.



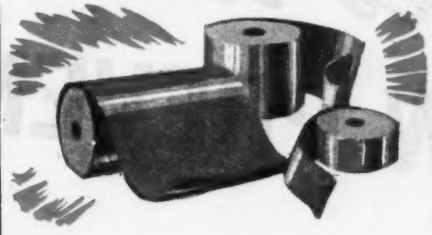
Rod and Bar. Sizes from ⅜ inches to 8 inches for forging and machining.



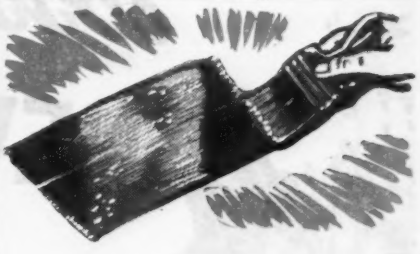
Shapes. Rolled and extruded sections to fulfill individual needs.



Parts. Fabrication at aluminum source saves manpower, plant space, scrap and transportation.



Foil. For years the largest producer of light gauge aluminum for packaging, technical and insulation purposes.



Powders and Pastes. For aluminum coatings.

CONCISE, AUTHORITATIVE

12 **Weight Calculator.** Slide rule for determining weights of all commonly used metals.

13 **Sheet.** (Bulletin 22-A.) Specifications, ordering data, etc. 8 pages.

14 **Product Design.** "Reynolds Aluminum, Its Important Role in Tomorrow's Products." (Catalog 100.) 16 pages.

15 **Motion Picture.** "A Recital of Faith." The story of aluminum production. 16mm and 35mm. Available to interested groups.

16 **Metal Industries.** Cond. Catalog of Reynolds products and services for Metal-Working Industries. Properties, applications. 8 pp.

17 **Extruded Shapes.** (Bulletin 35-A.) Specifications, ordering data, etc. 8 pages.

18 **Construction.** "Reynolds Aluminum, its Important Role in Modern Engineering." (Catalog 103.) 12 pages.

19 **Architecture.** "Reynolds Aluminum, its Important Role in Architecture." (Catalog 104.) 12 pages.

20 **"Aluminum Progress."** Bi-monthly, non-technical news bulletin of general interest.

21 **Alloys—R303.** A new aluminum alloy of highest strength and excellent corrosion resistance. (Bulletin 55-A.) 8 pages.

22 **Alloys—R301.** A new high strength aluminum alloy. Sheet and plate. (Bulletin 50-A.) 8 pages.

DON'T MISS THIS!

"Reynolds Aluminum, Its Important Role in Tomorrow's Products," is of great interest to every one concerned with design and production. 16 pages packed with useful information. Check 14... in coupon at right.

REYNOLDS:
Source of valuable technical knowledge

To the sum total of metallurgical knowledge Reynolds Metals has added much vital data . . . experience gained in pioneering new fields of aluminum production and product development—the use of improved machines and processes in the world's largest mills—the creation of new alloys, promise of even greater things to come.

From this background accomplishment, Reynolds is prepared to cooperate directly . . . prepared to offer its service to manufacturers with major problems to solve.

Much technical material is available upon request. Check the catalogs and bulletins desired. Write in detail concerning any special question. Reynolds Metals Company, Aluminum Division, 2537 S. Third Street, Louisville 1, Ky.

FREE Many of the bulletins and catalogs listed on the opposite page belong in your files. Please use coupon below in ordering.

Keep your dollars fighting . . . BUY MORE WAR BONDS

FILL OUT . . . MAIL TODAY!

7356-A1-2

Reynolds Metals Company
Aluminum Division
2537 South Third Street, Louisville 1, Kentucky

Send *post-free* material which I have checked below:

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														19	20	21	22

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TITLE_____

FIRM_____

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CITY_____ ZONE_____ STATE_____

If RUST is one of your aggravating problems, you can solve it by using RUST-O-LENE A, the new, highly successful rust-proofing lubricant developed by Sinclair.

Sinclair RUST-O-LENE A is a general-purpose lubricating oil compounded with a special rust preventive. It lubricates bearings and other moving parts, also cleanses and functions as a rust preventive. In addition, RUST-O-LENE A tends to remove existing rust and prevents future accumulation.

RUST-O-LENE A was developed after long research and experimental work under actual operating conditions. Learn how it can combat rust and machine wear . . . prevent fabric staining. Write for brochure.

Rust-O-Lene Reg. U. S. Pat. Off.

SINCLAIR TEXTILE LUBRICANTS

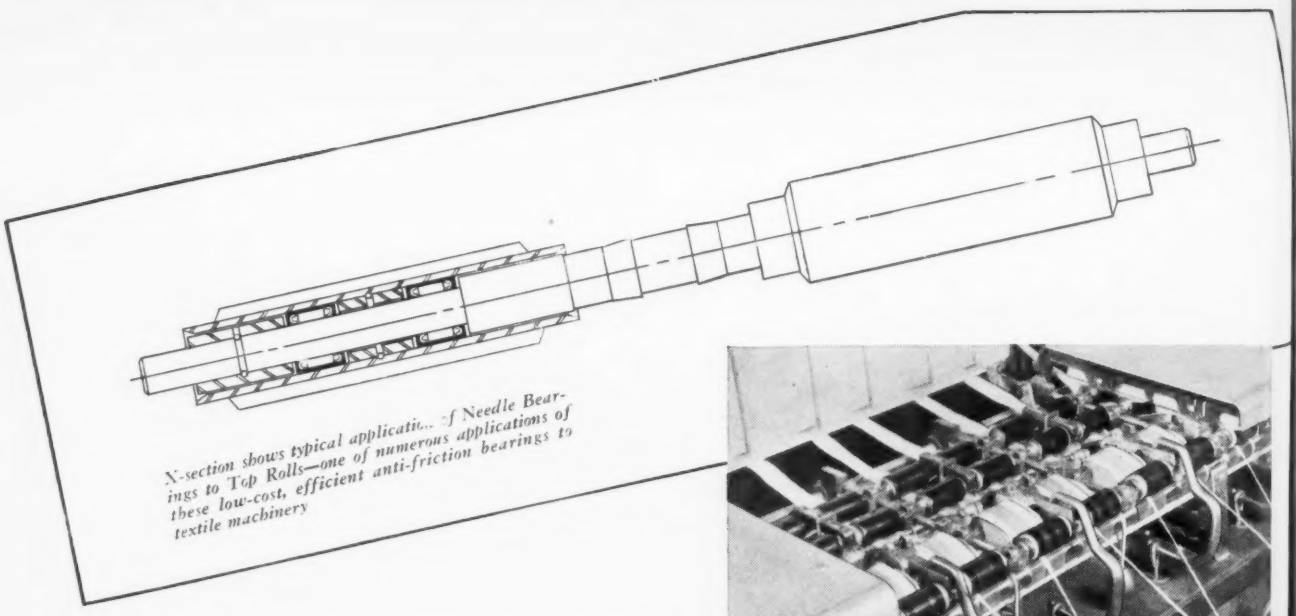
FOR FULL INFORMATION OR LUBRICATION COUNSEL WRITE SINCLAIR REFINING COMPANY, 630 FIFTH AVENUE, NEW YORK 20, N. Y.

THE *Deciding* FACTOR

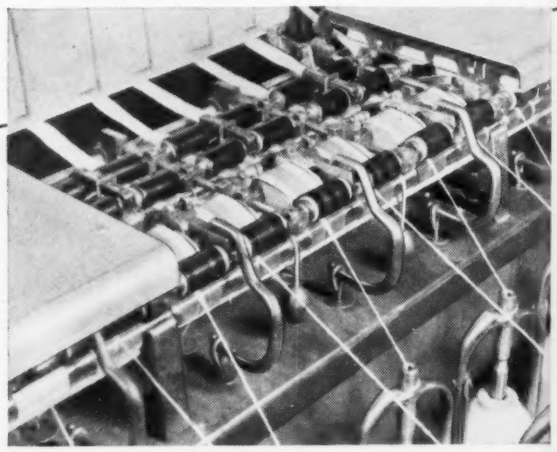
...in the purchase of men's underwear is often the quality of the knitting. And high quality knitting demands top quality needles—needles with precision-controlled temper, finish and dimensions such as Torrington's modern machine manufacturing methods consistently assure.

TORRINGTON *Latch Needles*

THE TORRINGTON COMPANY
Torrington, Conn., U. S. A.
Established 1866
Branches: New York • Philadelphia • Chicago
Greensboro, N. C. • Boston • St. Louis
Toronto, Canada



X-section shows typical applicatio... of Needle Bearings to Top Rolls—one of numerous applications of these low-cost, efficient anti-friction bearings to textile machinery



For Longer Sustained Operation of Top Rolls ...Use Torrington Needle Bearings

Top Rolls equipped with anti-friction Torrington Needle Bearings minimize friction . . . insure more even tension and greater uniformity of product . . . stand up better . . . give longer sustained operation.

Engineered for high radial load capacity, with a low coefficient of friction, these small and compact Needle Bearings are simple to install, maintain and lubricate . . . help to keep your top rolls and other textile machinery rolling at top speed and efficiency.

Soon you'll be replacing your existing machinery. You will get faster, better, *more continuous* output from new apparatus equipped with Torrington Needle Bearings. Our Catalog #30-A on Needle Bearings, detailing types, sizes and applications to your specific requirements, will be sent on request.

•

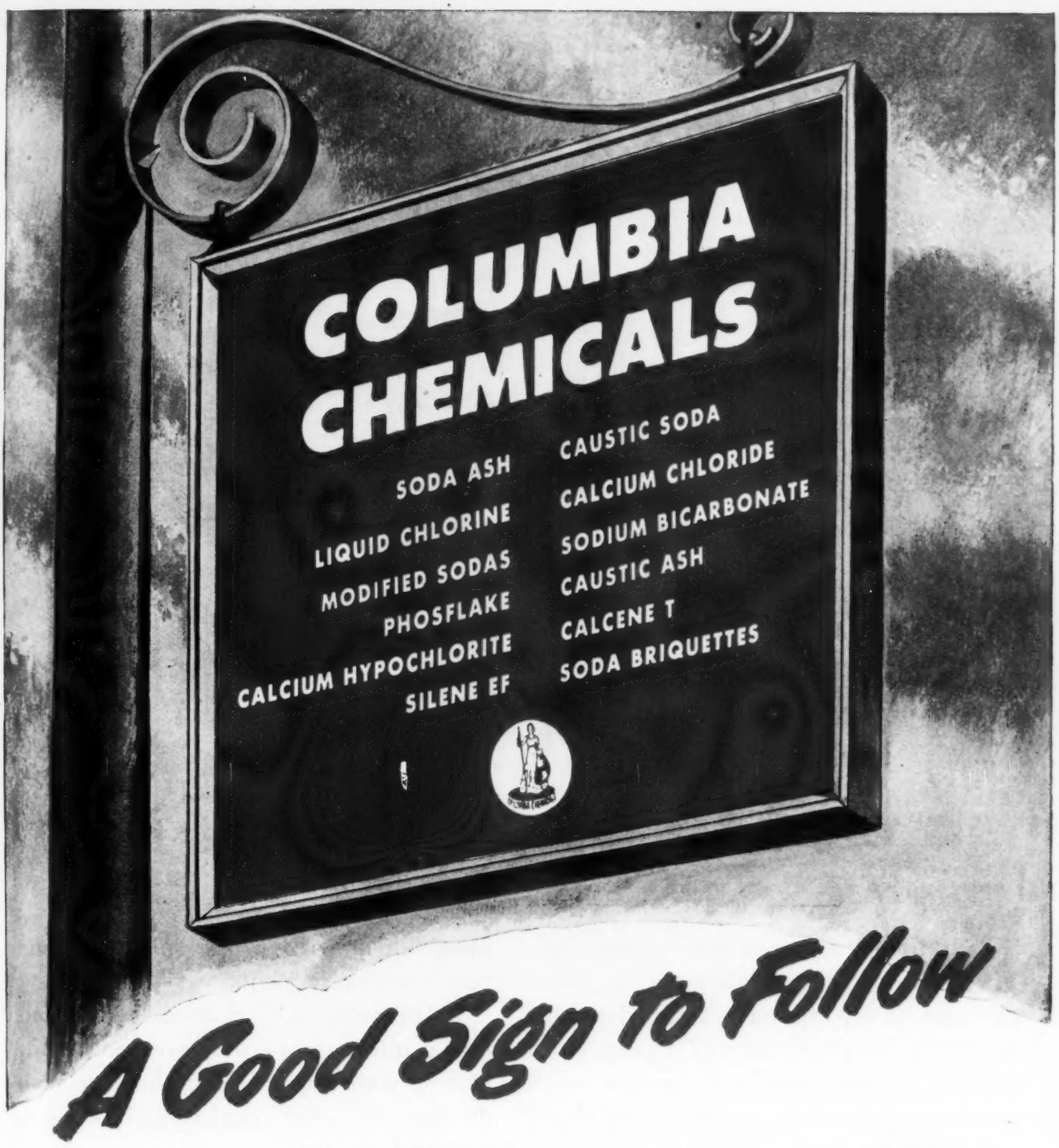
THE TORRINGTON COMPANY

Established 1866

TORRINGTON, CONN. • SOUTH BEND 21, IND.

New York Boston Philadelphia Detroit Cleveland Seattle Chicago San Francisco Los Angeles Toronto London, England

TORRINGTON NEEDLE BEARINGS



A Good Sign to Follow

Columbia products meet your most exacting requirements . . . Columbia policies contribute to enduring business relationships. Well located plants and excellent distribution facilities are other important factors in the selection of Columbia as your source of alkalies and related chemicals.

COLUMBIA CHEMICALS

PITTSBURGH PLATE GLASS COMPANY
COLUMBIA CHEMICAL DIVISION
GRANT BUILDING • PITTSBURGH 19, PA.

CHICAGO • BOSTON • ST. LOUIS • PITTSBURGH • NEW YORK • CINCINNATI • CLEVELAND
PHILADELPHIA • MINNEAPOLIS • CHARLOTTE • LOS ANGELES

"Certainly we're ready to talk elevators"...

DURING the past several years, the manufacturing facilities of the Otis Elevator Company have been devoted largely to the production of a great volume of specially designed elevators and precision equipment for a number of vital war requirements.

And, as long as the war lasts, a large part of these facilities will continue to be devoted to the production of war goods.

Right now, however, the Otis Elevator Company is in a position to help you *plan for your post-war elevator needs.*

Your Otis representative is ready to serve you. He is available to analyze fully your elevator problems and to make recommendations concerning the equipment which will be best suited to your post-war requirements.

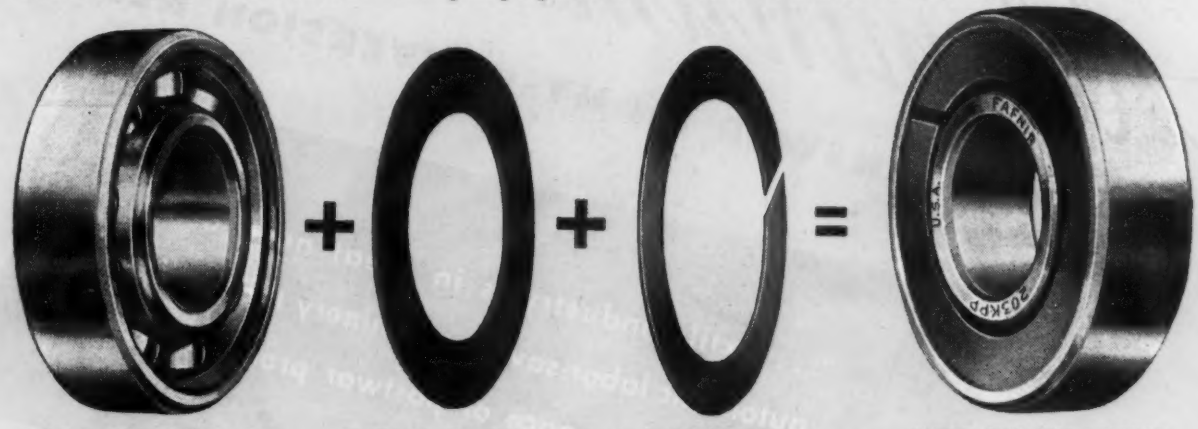
By planning now, you will be assured that a minimum of time will be lost in getting your required equipment in production after war restrictions have been removed.

So, to be certain of the last word in vertical transportation for present or proposed office buildings . . . for hospitals, hotels, factories, or warehouses, call your Otis representative *today.*

Otis ELEVATOR COMPANY
OFFICES IN ALL PRINCIPAL CITIES

FAFNIR PLYA-SEAL BALL BEARINGS

Performance Proved in Military Equipment • Now Available for General Use



Fafnir Standard Ball Bearing | Flexible Sealing Washer | Split Retaining Ring | FAFNIR PLYA-SEAL BEARING

POSITIVELY SEALED
— SEALS EASILY REMOVED

THE result of five years of development and testing, PLYA-SEAL bearings have proved the most effective, self-protected bearings yet designed. Approved for aircraft by the Army Air Forces and the Bureau of Aeronautics U. S. Navy, Fafnir PLYA-SEALS have been in use successfully for over two and one-half years in aircraft control bearings and operating equipment. Several thousand bearings incorporating the double PLYA-SEAL have completely eliminated former difficulties with metal shielded bearings in textile machines.

Whether you are designing a new product or planning to resume production on an old one, you will find it very much worthwhile to investigate and test Fafnir PLYA-SEAL Bearings. Write for complete descriptive folder. The Fafnir Bearing Company, New Britain, Conn.

PLYA-SEAL takes its place among these other FAFNIR "FIRSTS" . . . Wide Inner Ring Ball Bearing with Self-Locking Collar; Seal and Shield Type Bearings; Compact Super-Precision Spindle Bearings; Compact Super-position Retainers, Aircraft Ball Bearings, Rubber Pillow Blocks . . . and more.

WHAT IS PLYA-SEAL?

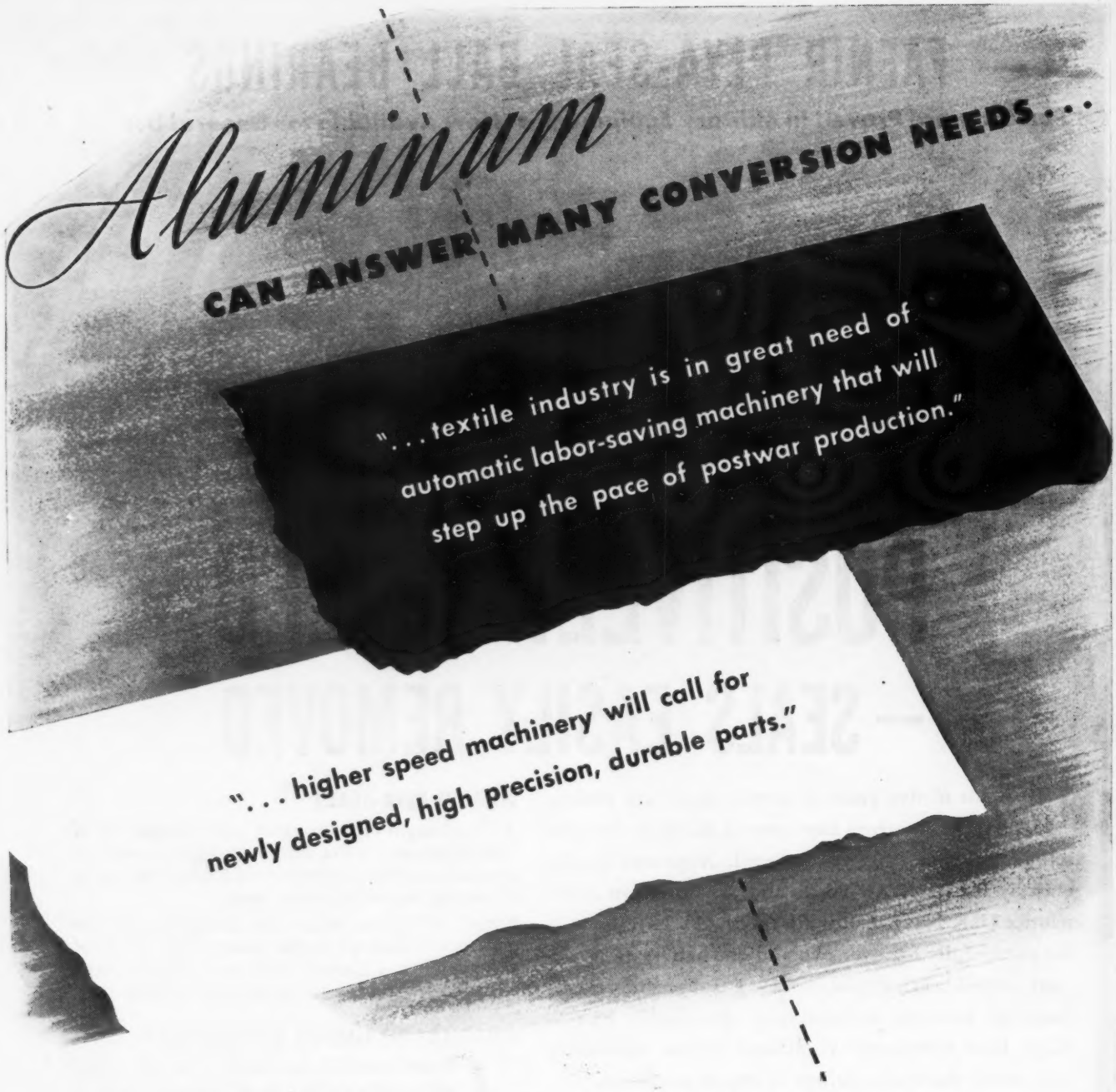
A diaphragm-type, contact seal comprised of two members – a flat, flexible sealing washer of synthetic rubber impregnated fabric and a split retaining ring of stainless steel.

Firmly held in the outer ring, the sealing washer does not rotate with the inner ring but is in contact with a ground groove to form a very effective seal with a minimum of friction.

WHAT ARE PLYA-SEAL'S ADVANTAGES?

1. Assures maximum retention of lubricant, maximum exclusion of dirt and liquids.
2. Causes no distortion of the outer ring or race, nor does it affect the concentricity of either the rings or races.
3. Forms a positive seal with the outer ring while maintaining perfect contact with the inner ring.
4. Non-capillary and impervious to liquids, grease, oil, gasoline, water and a wide variety of solvents. Not affected by heat or cold. Sealing washer does not deteriorate with age.
5. Easily removed and replaced to allow inspection, washing and re-greasing.

FAFNIR
BALL BEARINGS


Aluminum
CAN ANSWER MANY CONVERSION NEEDS . . .
". . . textile industry is in great need of automatic labor-saving machinery that will step up the pace of postwar production."
". . . higher speed machinery will call for newly designed, high precision, durable parts."

Lightweight, high-strength Alcoa Aluminum parts in postwar textile mill machines will permit higher speed operation. *Speed-of-production* will be a prime factor in meeting postwar competition.

Manufacturers of mill equipment now have a wealth of experience in working with aluminum. In making implements of war, they have learned aluminum's many advantages. It is to these designers and builders with aluminum "know-how" that your industry must look to solve your conversion problems.

Don't hesitate to ask your supplier for equipment built of aluminum. ALUMINUM COMPANY OF AMERICA, 1942 Gulf Building, Pittsburgh 19, Pennsylvania.

ALCOA FIRST IN **ALUMINUM**

ALCOA ALUMINUM

A head start on life!

DRAX-treated fabrics lead a charmed life!

Trademark Reg. U. S. Pat. Off.

More than just pretty . . . these children's clothes have a *plus* that gives them a head start on sales! They are protected with Johnson's DRAX! DRAX is a new fabric finish that guards the freshness of any textile or garment . . . makes it resist dirt . . . withstand handling . . . shed water!

DRAX, made by the makers of Johnson's Wax, may be used on any fabric . . . cotton, rayon, linen, wool . . . or any garment . . . baby clothes, sportswear, dresses, shirts. And DRAX-treated fabrics *continue* to lead a charmed life because DRAX protection is so easy to maintain. The housewife will be able to re-DRAX right in her own home. Or she may obtain DRAX service at her laundry or dry cleaner.

The advance story of DRAX is being told from coast to coast by announcement tags in Johnson's national advertising in such publications as The Saturday Evening Post, Good Housekeeping, American Weekly, and many others, as well as special DRAX advertisements in Daily News Record and Women's Wear Daily, telling the DRAX story to buyers, converters, and garment makers.

DRAX is easy and economical to use! You need no extra equipment. DRAX stays stable in solution, may be diluted with ordinary tap water.

Attractive tags are available to identify DRAX-treated merchandise. Be ready for the demand. Learn about DRAX now. Send for a sample of DRAX today!

S. C. JOHNSON & SON, Inc.
Product Finishes Department, Racine, Wisconsin
Starrett Lehigh Building, 601 W. 26th Street, New York 1
Or any of our other 18 district offices

These charming children's clothes are DRAX-protected! Their DRAX tags tell your customers a story of plus *value!*

DRAX
is made by the makers of
JOHNSON'S WAX

S. C. JOHNSON & SON, Inc., Department TW-45, Racine, Wisconsin
Yes, I'd like to try DRAX. Please send my FREE sample, plus instructions and complete information.

Name_____

Firm Name_____

Address_____

City_____ State_____

Maintenance time reduced to a minimum

Every day, Powell Valves are piling up records for continuous operation without requiring maintenance. And when they finally need attention, Powell design and construction is such that the time spent in maintenance is reduced to a minimum. The gate valves shown here are examples of the complete Powell Line in which ease of maintenance is always a feature.

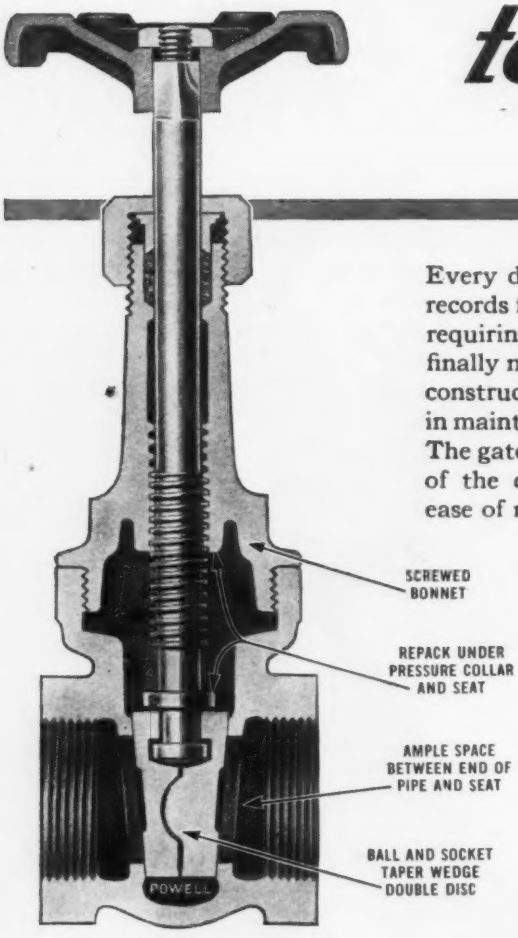

SCREWED BONNET
REPACK UNDER PRESSURE COLLAR AND SEAT
AMPLE SPACE BETWEEN END OF PIPE AND SEAT
BALL AND SOCKET TAPER WEDGE DOUBLE DISC
POWELL

Fig. 500
BRONZE "U. S." GATE VALVE

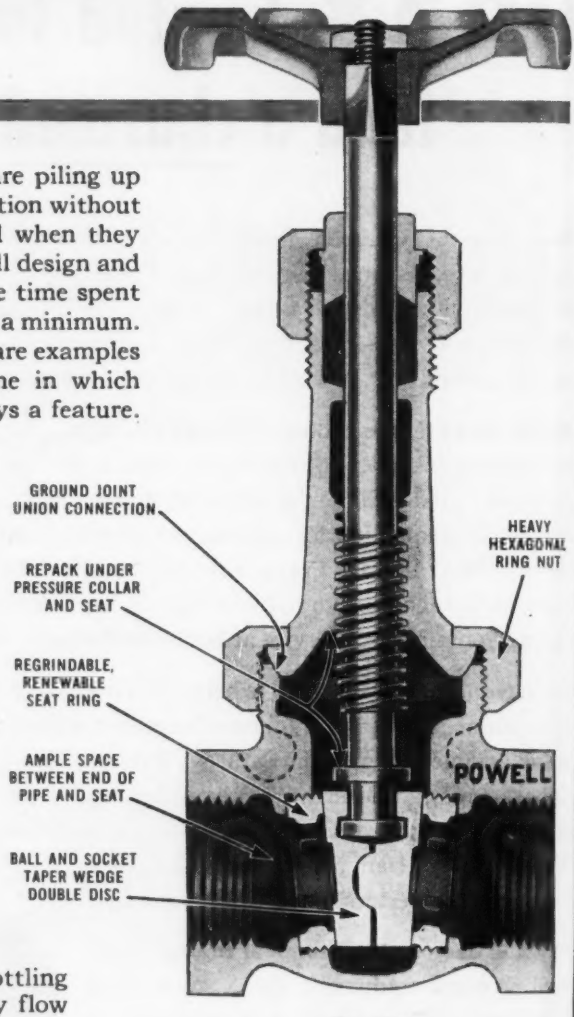

GROUND JOINT UNION CONNECTION
REPACK UNDER PRESSURE COLLAR AND SEAT
REGRINDABLE, RENEWABLE SEAT RING
AMPLE SPACE BETWEEN END OF PIPE AND SEAT
BALL AND SOCKET TAPER WEDGE DOUBLE DISC
HEAVY HEXAGONAL RING NUT
POWELL

Fig. 1375
BRONZE "WHITE STAR" GATE VALVE

In all installations where pressure drop is undesirable and throttling is unnecessary, the gate type of valve, with its full straightway flow area through the body, should be used.

Fig. 500 is Powell's answer to the widespread demand for a sturdy small bronze gate valve where initial cost is a consideration. With its readily removable screwed-in bonnet it is easy to reface the seats and disc or replace the disc if necessary. The taper wedge double disc, with its Powell-designed ball and socket action, readily adjusts itself to any inclination of the seat faces caused by refacing, thus effecting a tight closure. Since the seats are cast integral with the body, this valve will give dependable service as long as sufficient metal remains in the seats to permit refacing.

For *extra long life*, Fig. 1375 is recommended. The ground joint union connection makes it especially easy to remove the bonnet assembly from the body to reface or, if necessary, to replace the disc and renewable seats. This may be done any number of times without any distortion of the body neck, such as might occur with a screwed-in bonnet. Both disc and seats are made from a special hard nickel-bronze alloy which resists wear over a long period of time. When these parts will not take further refacing, they can be readily replaced with new ones, thus greatly prolonging the life of this valve.

All Powell Valves that require repacking are provided with a specially machined cut-off to permit repacking under pressure when wide open.

The Wm. Powell Co.
Dependable Valves Since 1846
Cincinnati 22, Ohio

POWELL VALVES

HEAT PROVER..QUICKLY REVEALS INCOMPLETE COMBUSTION

FREE Demonstration Test Will Help Solve Your Combustion Problems . . . Conserve Fuel . . . Increase Quantity and Quality of Your Product.

Today, like many engineers in both small and large industrial plants, you very likely want to know—*by accurate measurement*—the answers to these four vital problems:

1. **Just how efficiently do my boilers burn fuel?**
2. **How efficiently do wartime operators control them?**
3. **What have wartime overload conditions done to normal fuel economy?**
4. **And what, actually, is the status of my combustion control equipment?**

To all these questions—and more—Cities Service has the almost perfect answer in the Cities Service INDUSTRIAL HEAT PROVER. This unique instrument quickly analyzes combustion . . . accurately determines degree of fuel waste due to air deficiency or dilution. Thoroughly tested on practically every type of combustion equipment in this country and with every kind of fuel, the Industrial Heat Prover already has been adopted by users of steam power plants, open hearth furnaces, cement kilns, heat-treating apparatus, crucible furnaces and internal combustion engines. And for a very good reason.

Accurate combustion analyses made as a result of the Cities Service Industrial Heat Prover tests have effected considerable savings in fuel costs...reduced repairs and replacements on furnace linings, crucibles and refractories due to flame corrosion... and have led to increased production of better and more uniform products.

Why not get a Cities Service Industrial Heat Prover Test in your own plant? You may have it *without cost or obligation*—if you will simply mail the coupon at right. A Cities Service Engineer will then make an Industrial Heat Prover Test in your plant—at your convenience. Mail the coupon—today.

THE CITIES SERVICE INDUSTRIAL HEAT PROVER—a new, accurate combustion analysis instrument developed by the Cities Service Research Division enables those engaged in the oxygen control of furnace atmospheres to achieve greater combustion efficiency at less cost.

(This offer is available only in Cities Service marketing areas EAST of the Rockies.)

CITIES SERVICE OILS — ONCE-ALWAYS

Cities Service Oil Company
Room 277
Sixty Wall Tower, New York 5, N. Y.

Gentlemen: Please arrange a Cities Service Industrial Heat Prover Test for my plant. I understand there is no charge or obligation for this service.

Name.....

Title.....

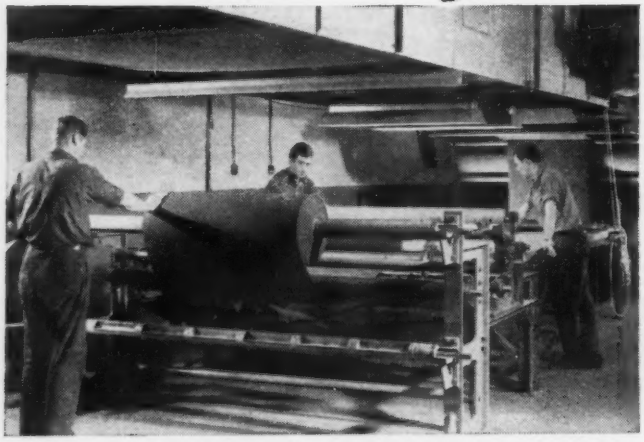
Company.....

Address.....

4 TOUGH JOBS

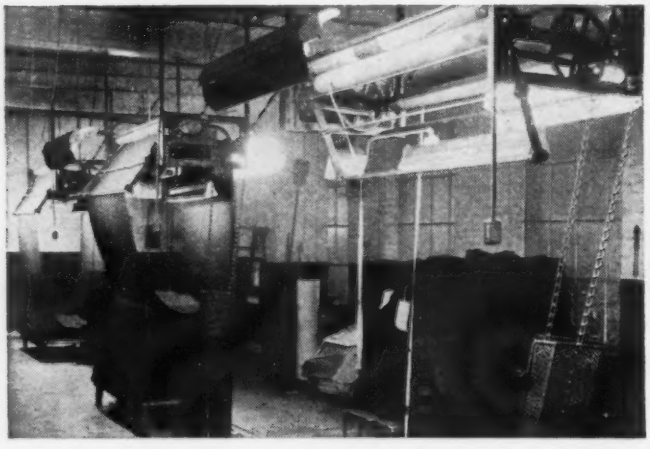
. . . and how to lick 'em with G-E Mazda Lamps

Proper use of better lighting can produce startling results . . . in better efficiency, in reduced spoilage, in more and faster production. Shown here are four typical textile jobs, each much improved with better lighting from G-E Mazda Lamps. Ask your G-E Lamp Distributor for full details.



1 **Instant detection** of flaws in finished carpeting enables this mill to speed inspection and avoid rejects. With better on-the-spot lighting—using G-E Mazda Fluorescent lamps—even unskilled workmen can keep production up, spoilage down.

2 **Accidents happen** in poorly lighted rooms . . . around fast-moving machinery. Above, the low-brightness, high-level illumination from G-E Fluorescent lamps gets in and around machine parts, helps operators see better, faster, more accurately.



3 **Special machine** lighting jobs — like this one using G-E Fluorescent lamps—are extremely important in maintaining efficient production, with less down time on critical equipment.

4 **Extremely fine** detail work calls for easy seeing and high visibility — such as G-E Lamps provide above. Why not consider these advantages in your mill?

Production starts with good lighting. Remember this when you buy lamps: the constant aim of G-E Lamp Research is to make G-E Lamps STAY BRIGHTER LONGER.

G-E MAZDA LAMPS

GENERAL ELECTRIC

Hear the G-E radio programs: "The G-E All-Girl Orchestra", Sunday 10:00 p. m. EWT, NBC; "The World Today" news, Monday through Friday 6:45 p. m. EWT, CBS; "The G-E Houseparty," Monday through Friday 4:00 p. m. EWT, CBS.

BUY MORE WAR BONDS . . . AND HOLD 'EM

(Above)
Treated with Lanaset, fibers are stabilized. Texture is preserved. The wool "breathes."

(Left)
Untreated fabric. Felting fills up the air spaces between fibers and prevents the wool from "breathing."

*Lanaset** LETS THE WOOL BREATHE

LANASET* does wonders for wool! When wool is treated with LANASET, *the new melamine resin,* its resistance to shrinkage and felting are greatly improved. It maintains excellent texture and handle and the desirable qualities of the wool remain. It continues to *"breathe"* even after repeated laundering and dry cleaning.

LANASET can be successfully applied to wool fabrics for such washable items as dresses, sportswear, knit goods, socks, children's wear and blankets.

LANASET is now available for full scale mill trials, subject, of course, to W.P.B. rulings. Ask your Calco representative for full details on LANASET for shrinkage control.

CALCO CHEMICAL DIVISION
AMERICAN CYANAMID COMPANY

BOUND BROOK — Calco — NEW JERSEY

New York • Boston • Philadelphia • Providence
Charlotte • Chicago

Lanaset FOR WOOL SHRINKAGE CONTROL THAT LETS THE WOOL BREATHE

*LANASET is American Cyanamid Company's trade-mark covering its melamine resin for controlling wool shrinkage. The process under which it is applied is covered by United States re-issue Patent No. 22,566.

Why do HYSTERS have pneumatic tires?

. . . BECAUSE a fork lift truck's value is increased through its ability to operate efficiently on or off pavements, over rough yard surfaces, anywhere a truck will go. **Pneumatic tires furnish that kind of traction** — up or down inclines, on soft or muddy ground. Pneumatics don't wear holes in warehouse floors. Pneumatics prevent jolts and jars; they safe-guard loads, prevent driver fatigue.

Pneumatic tire mounted HYSTERS can handle maximum loads under conditions that would call for the lightening or unloading of materials on many other trucks. This is of **special advantage in traveling up inclines** or, as illustrated above, over uneven platforms. HYSTER'S powerful gasoline engine, the hydraulically-operated, internal, expanding-type brakes, work together with HYSTER'S traction-geared pneumatics to "see the load through." All tires are mounted on standard, automotive, demountable wheels and are interchangeable. New catalogs fully explain all four trucks. Write for copies.

HYSTER COMPANY

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1822 North Adams
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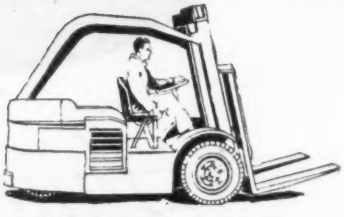
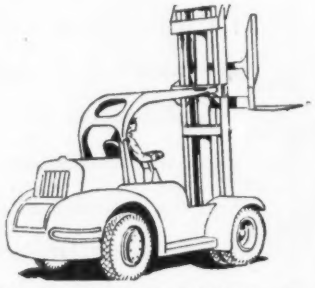
HYSTER
FOR ANY LIFT OR PULL

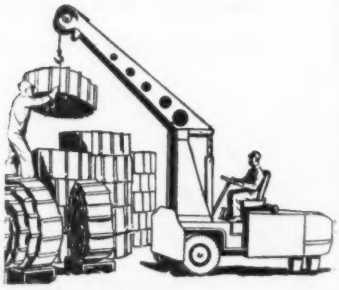
HYSTER 20 Fork Lift Truck
For one ton loads



HYSTER 75 Fork Lift Truck
7500 lbs. capacity



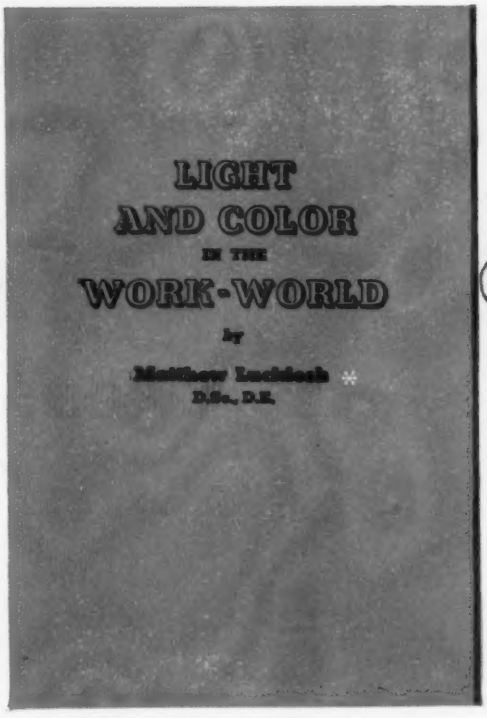
HYSTER 150 Fork Lift Truck
Heavy Duty 15,000 lbs. capacity



HYSTER KARRY KRANE
10,000 lbs. capacity

Now...for the first time...

LIGHT, PAINT AND COLOR ARE TREATED AS *RELATED SUBJECTS!*



*Director, Lighting Research Laboratory, General Electric Company, Nela Park, Cleveland; father of the "Science of Seeing"; author of twenty-three published books on light, color and human vision.

HAVE you ever thought of workers as "Human Seeing-Machines" . . . of their eyes as the "cutting tools" in the machines . . . of LIGHT as the "oil" that makes them more efficient?

Do you fully appreciate the fact that light and paint are *inseparable partners* in creating good seeing conditions?

Do you realize that the *reflection* of light from your plant ceilings and walls is as important to good seeing as the direct illumination you get from the lighting fixtures themselves?

Do you know where colored paints can be used to best advantage in the work-world . . . and where they *shouldn't* be used?

In this highly readable new booklet by Dr. Matthew Luckiesh, noted color and lighting authority, the whole complex subject of Color for Industry is taken apart and analyzed on the basis of *facts* gleaned from his 30 years of research and practical experience. For the first time Light, Paint and Color are treated as *related subjects* and their contributions to seeing and plant efficiency viewed in proper perspective.

We commend this booklet to every executive concerned with plant efficiency or the health, safety and well-being of plant employees. We shall be happy to send you a copy, without cost or obligation; just fill out and mail the coupon below.

DATE.....

U. S. GUTTA PERCHA PAINT COMPANY
20-D Dudley Street, Providence, Rhode Island

Please send us without charge or obligation, Dr. Luckiesh's booklet, "Light and Color in the Work-World", also your booklet, "Color for Industry".

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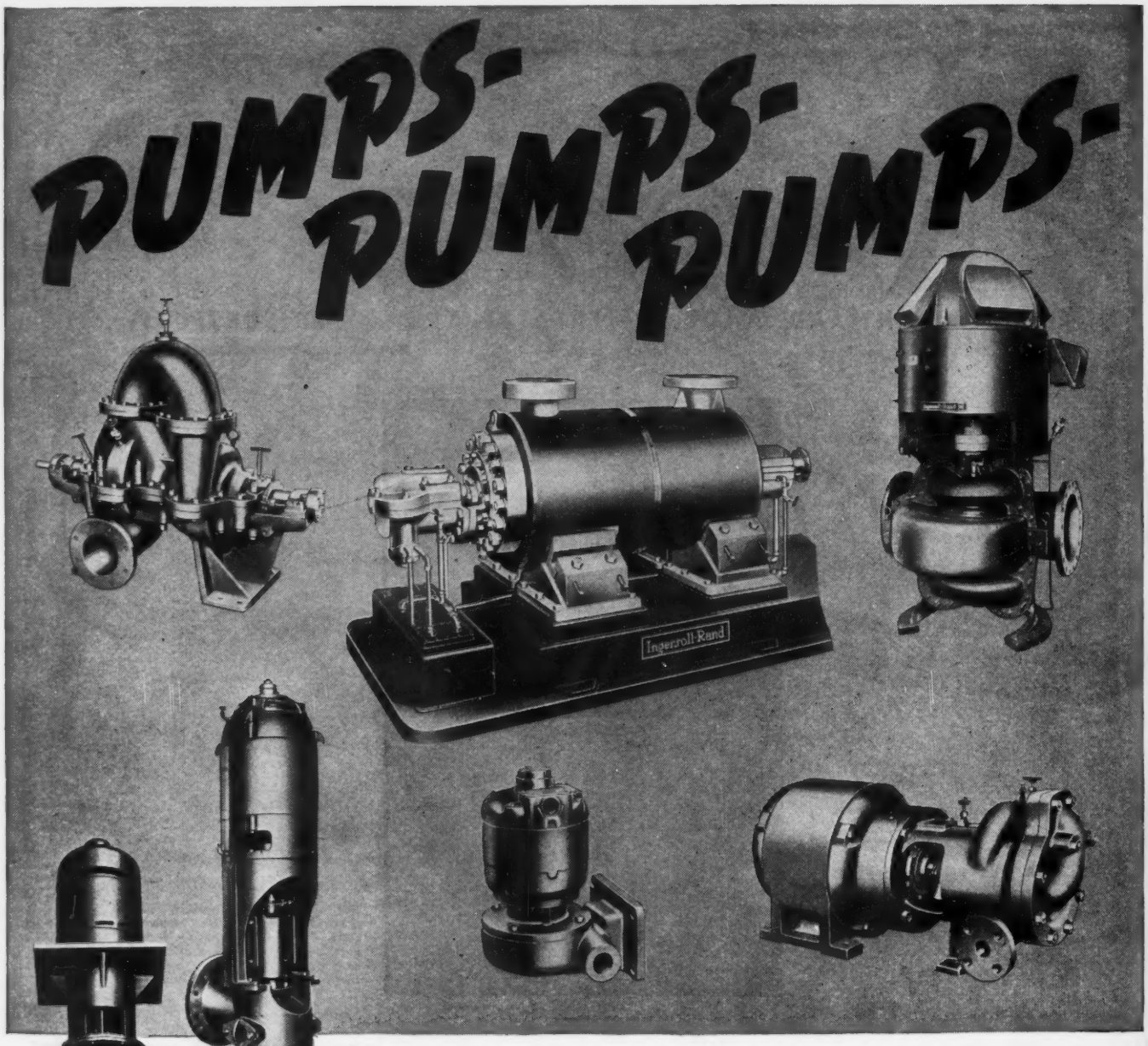

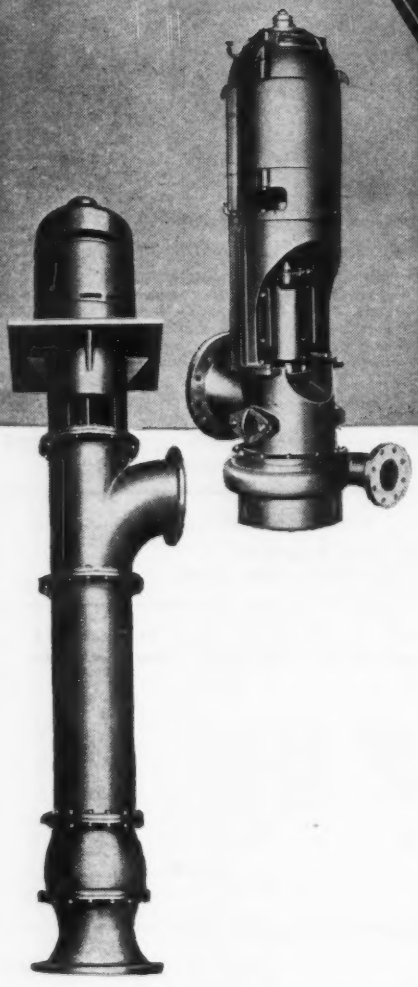

Little pumps...big pumps...special pumps...standard pumps...

Pumps for water...pumps for oil...pumps for food...pumps for chemicals.

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Yes! centrifugal pumps are our business. There is a complete range of sizes to meet any common and many unusual liquid moving problems. An experienced staff of engineers is available to help you find the pump to meet your needs. Ingersoll-Rand Company, Cameron Pump Division, 11 Broadway, New York 4, N. Y.

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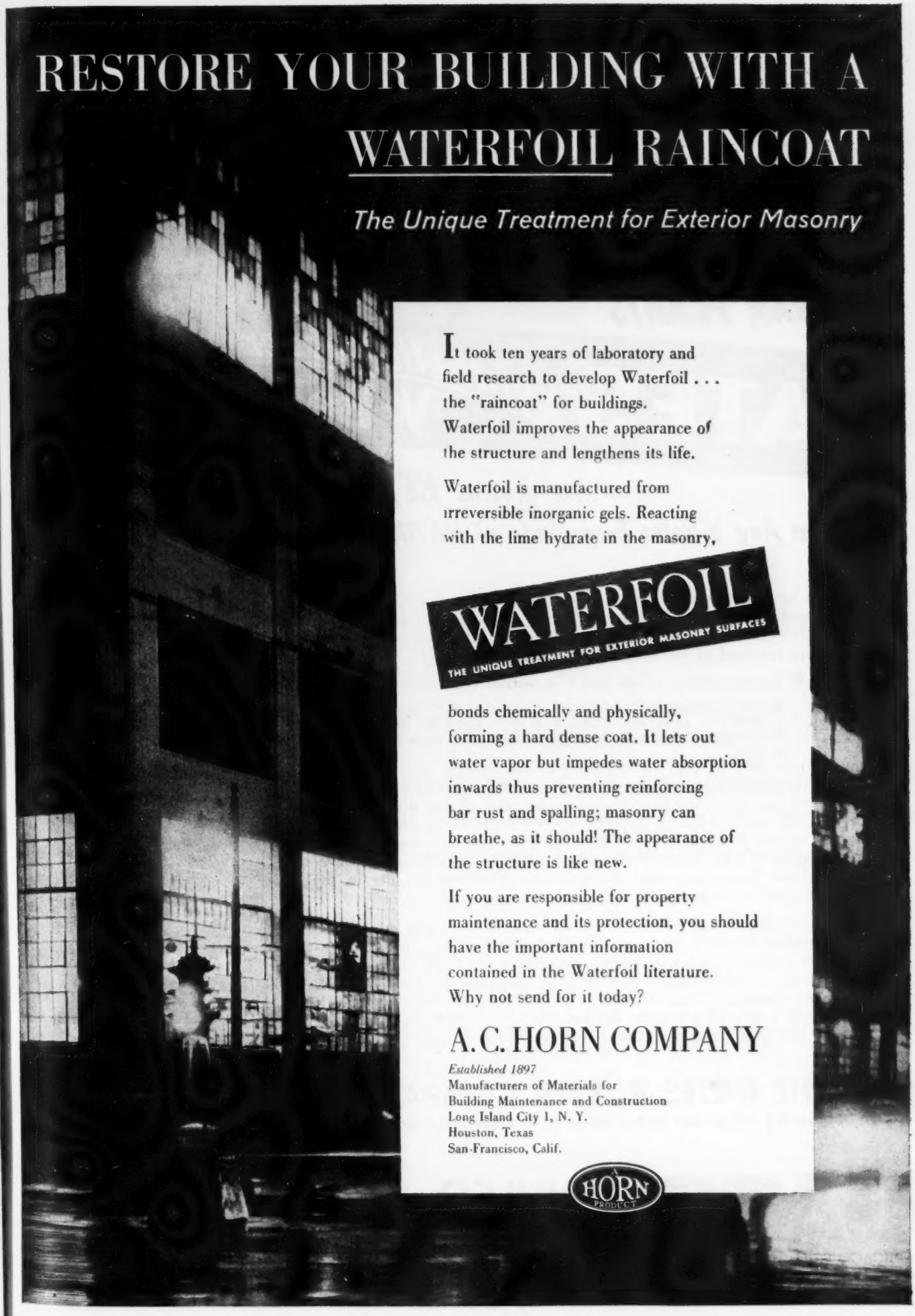
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WATERFOIL RAINCOAT
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It took ten years of laboratory and field research to develop Waterfoil . . . the "raincoat" for buildings. Waterfoil improves the appearance of the structure and lengthens its life.
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If you are responsible for property maintenance and its protection, you should have the important information contained in the Waterfoil literature. Why not send for it today?
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Established 1897
Manufacturers of Materials for
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In Thousands of *WAR PLANTS*

GATES *Synthetic Rubber* V-Belts

—are giving *BETTER SERVICE*

Than Any V-Belts Ever Made of NATURAL RUBBER!

To meet the unprecedented severity of combat service on U. S. Army tanks, tractors and self-propelled big guns, Gates has developed and built synthetic rubber V-belts to far higher service standards than were ever required of pre-war, natural rubber V-belts!

- **The importance of this fact to industrial V-belt users is this:**

  Every improvement developed by Gates for these Army V-belts has also been added, day by day, to the quality of the standard Gates Vulco Ropes which have been delivered to you.

In the case of many other products, you must wait until after the war to get the benefit of war-time improvements. But victory depends upon production—and production depends upon V-belts which drive the producing machines. That is why Gates has been able to pass on to you immediately, in your Standard Gates Vulco Ropes, every V-belt improvement which Gates specialized research has developed for use in the Army's motorized equipment.

In addition, where V-belts of special construction are required your Gates Rubber Engineer can supply a Gates V-belt that is precisely engineered to meet your special needs. Whenever you have a drive problem or a V-belt problem, just pick up your telephone directory and look under the heading "Gates Rubber." The Gates Rubber Engineer will bring right into your plant the full benefits of every advance in V-belt construction that Gates specialized research has developed.

—and one of these 5 GATES V-belts will meet any Special need you may have.

- Rayon Cord V-Belts
- Static-Safety V-Belts
- *Special* Synthetic V-Belts
- Cotton Cord V-Belts
- Steel Cable V-Belts

THE GATES RUBBER COMPANY

Engineering Offices and Jobber Stocks in All Large Industrial Centers

Gates

The Mark of Specialized Research

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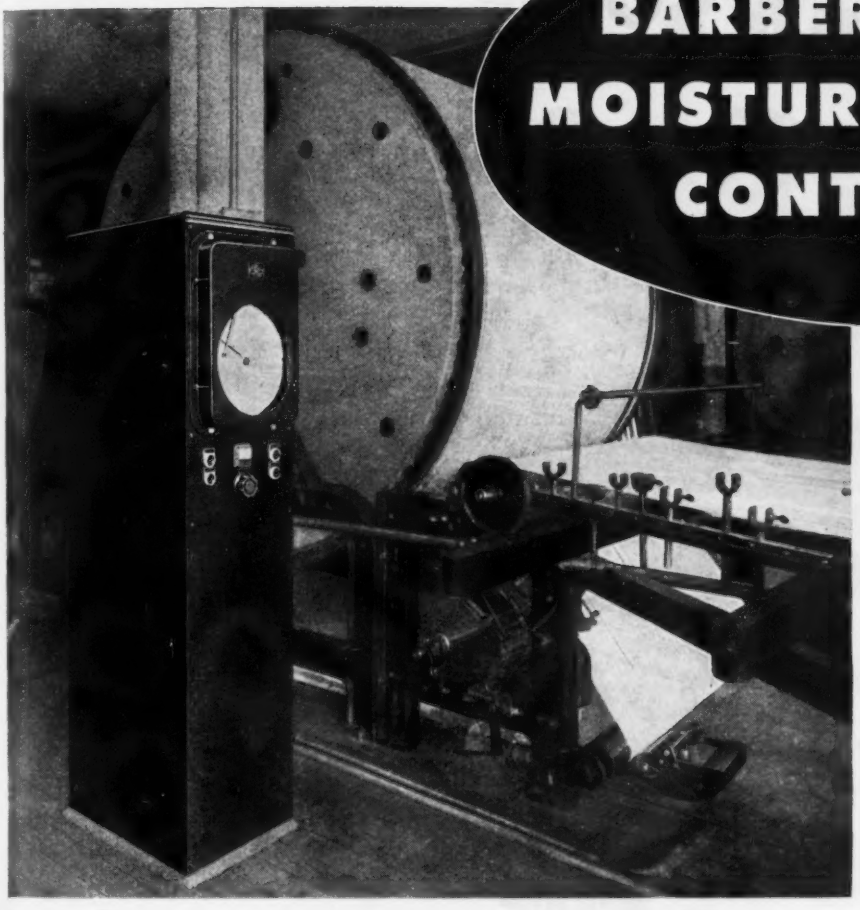
BARBER-COLMAN MOISTURE CONTENT CONTROLLER



AUTOMATIC ELECTRONIC CONTROL OF REGAIN AT THE SLASHER GIVES MORE UNIFORM QUALITY PRODUCT AND INCREASED PRODUCTION

EXPERIENCE COUNTS

SINCE 1900 BARBER-COLMAN COMPANY HAS BEEN PRODUCING PROGRESSIVE EQUIPMENT FOR IMPROVING PRODUCTION IN TEXTILE MILLS

For details on the principles, features, advantages, and the benefits to be gained from Barber-Colman Moisture Content Control equipment, send for this brochure. Ask for Bulletin F-1705-1.

We first began getting acquainted with textile people and their problems 45 years ago when we introduced a Hand Knotter which improved the efficiency of winding machine operators. Then we produced the Warp Tying Machine which speeded up the operation of replenishing repeat warps, and the Drawing-In Machine which took the drudgery out of the tedious and difficult task of pulling warp ends through reeds, harnesses and drop wires. Over 20 years ago we brought out the Automatic Spooler and High-Speed Warper which have greatly improved the quality and efficiency of winding and warping. Now we want to call your attention to one of our newest products for textile mills — the Barber-Colman Moisture Content Controller. Like every Barber-Colman product before it, this item is presented on the basis that a pre-sale survey must indicate the installation will be a paying proposition for the purchaser. We feel that our many years of experience in your field enables us to give mature consideration to your needs, and thus we can assure you that your purchase of Barber-Colman Moisture Content Control equipment will be satisfactory in every way.

Barber-Colman Company

45 YEARS EXPERIENCE SERVING TEXTILE MILLS

ROCKFORD ILLINOIS BOSTON MASSACHUSETTS GREENVILLE SOUTH CAROLINA GREENSBORO NORTH CAROLINA ATLANTA GEORGIA

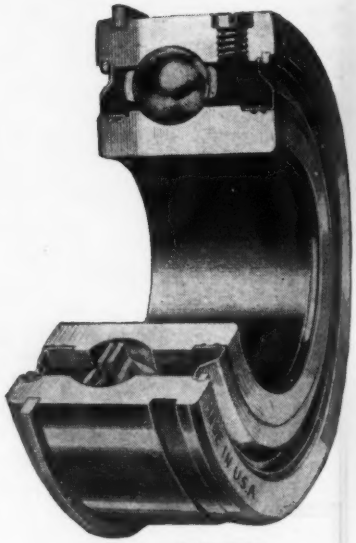
THAT EXTRA SOMETHING...

FOR THE LONG, HARD PULL

IN AN ATHLETE, it is called "STAMINA." In a ball bearing, it is DURABILITY—and it is determined by the inbuilt features that safeguard against wear and break-down.

The NORMA-HOFFMANN "CARTRIDGE" BALL BEARING has all these vital features, developed to the last degree:—wear-less, friction-free, all-metal seals (removable and replaceable) sealing lubricant in and dirt out, regardless of shaft angle; at least double the grease capacity of any other single-row bearing. A design that holds the grease ON THE ROLLING SURFACES, where it is most effective.

Read about these, and other, valuable features of the NORMA-HOFFMANN "CARTRIDGE" BALL BEARING in the Catalog, sent on request. Or, ask our nearest office to have one of our Field Engineers call and explain.



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NORMA-HOFFMANN BEARING CORPORATION

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THE WAR DECORATIONS OF TEXTILE MACHINE WORKS

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One Star All-Navy "E" Burgee
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Three Star Army-Navy "E"
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Directors, computors, aiming devices, gun controls! . . . We of "Textile" are *enlisted for the duration,* building precision instruments for our armed forces—on land, on sea, in the air! . . . *When Victory is won* we will begin production on the new high-precision READING Machines, designed to develop a new-high standard of quality and quantity production in the knitting of Full-Fashioned Stockings. . . . Until such time as we can deliver these new machines to you, we will do our utmost to help you keep your present equipment at highest efficiency.

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FASTER MOISTURE ABSORPTION!

Superior Rewettability of NOPCO 2272-R Speeds Up Sanforizing Production

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A Versatile Wetting Agent

From the standpoint of rewettability alone, NOPCO 2272-R has an important bearing on the volume and quality of sanforized goods.

And, as one of the most versatile products of its type, NOPCO 2272-R not only speeds rewetting in sanforizing, but in addition offers superior wetting out, penetrating, dispersing and dye leveling properties.

NOPCO 2272-R is . . .
Especially adapted for vat dyeing because of its stability in strong alkaline solutions up to 4% caustic soda (8.56°Tw.)

ECONOMICAL because of its rapid wetting or rewetting at low concentrations and wide temperature ranges.

An outstanding product of its kind based on performance and cost.

For further information write NATIONAL OIL PRODUCTS COMPANY, HARRISON, N. J. — Branches: Boston, Chicago, Cedartown, Ga., Richmond, Calif.

NOPCO EVOLVED THROUGH RESEARCH

The Bright Idea for sparkling colors and fabrics...

● This versatile detergent and penetrating agent offers many advantages that make it popular with experienced textile men.

As an afterwash for prints, a very small quantity brightens colors and gives sparkle to the material. It has no adverse effect on the most delicate shades. Recommended as a soaping and dyeing assistant, particularly with acetate colors.

As an addition to the scouring or boil-off bath, Oratol L-48 has been found very useful, and is particularly satisfactory for wool.

Oratol L-48 is a sulphonated amide product for use in neutral, acid or alkaline solutions. It is not affected by hard water or metallic salts, and prevents the formation of insoluble soaps on the surface of the dye liquors. The detergency does not depend upon alkalinity for its action. Write today for a generous free sample.

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American Magnesium Warp Beams are LIGHT, STRONG and TRUE

Mazlo Magnesium warp beams are time-savers. Their extremely low weight speeds up the warping operation by permitting faster starts and stops. Their permanent dimensional accuracy reduces vibration and results in better warps.

Because of the high strength and stiffness of Mazlo Magnesium warp beams, they can withstand the tremendous forces exerted by modern synthetic yarns. Periodic waxing gives adequate surface protection against moist atmospheres. Maintenance cost is low.

For information on magnesium tricot warp spools, section beams, loom beams, edge spools and jack spools, write Aluminum Company of America, Sales Agent for Mazlo Magnesium warp beams, 1705 Gulf Building, Pittsburgh 19, Pennsylvania.

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AMERICAN MAGNESIUM CORPORATION

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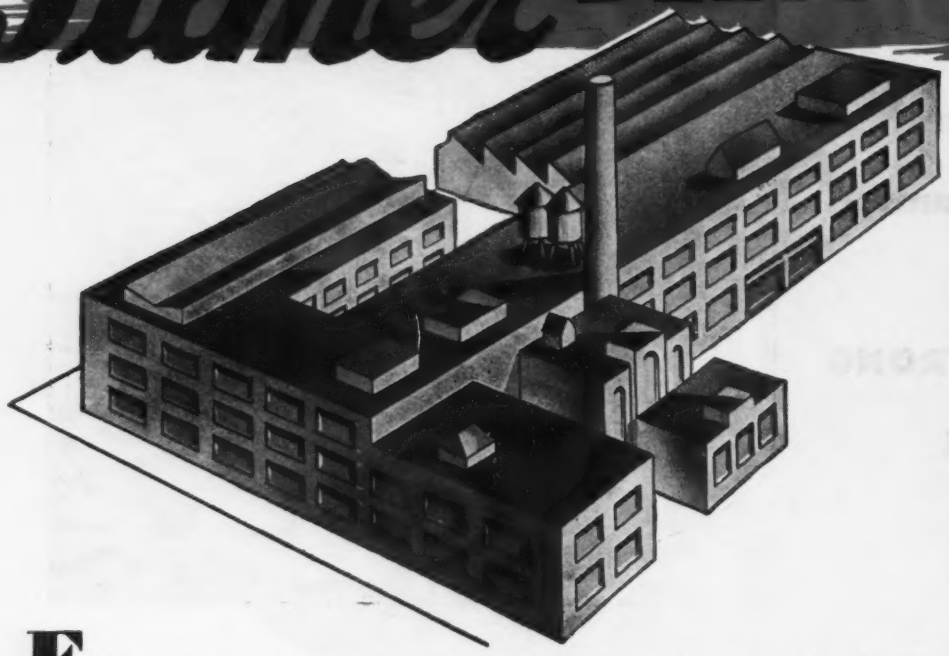
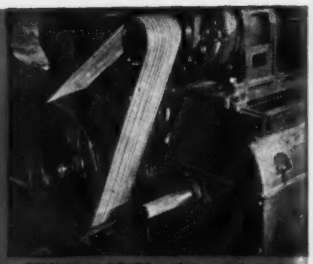
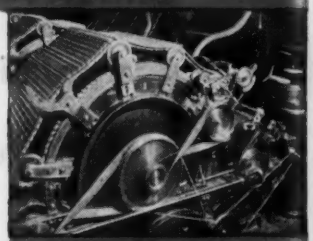
The entire mill can operate on Gilmer BELTS

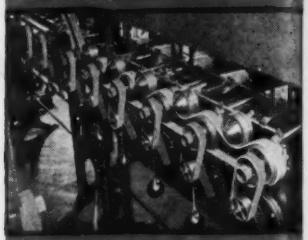




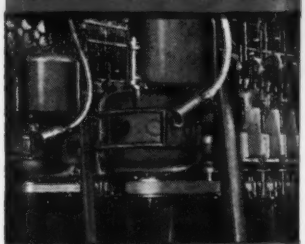
GILMER V-BELTS—FHP and Multiple. Have many applications. Space-saving, silent, shock-absorbing. Lock in the grooves with a non-slip grip.



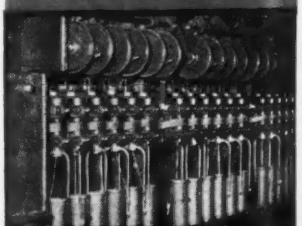
GILMER KABLE KORD LICKERIN BELTS. A contactor and power belt in one. Noted for exceptional grip, strength, low-stretch, small slippage and high tensile strength.



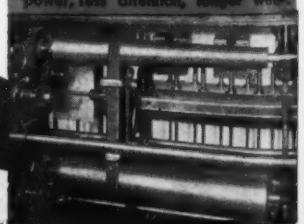
GILMER HEVALOID BELTS. Made under Hevaloid patent with Neoprene compound, provides high coefficient of friction. For precision work at 9000 f.p.m. Resist soil, heat, stretch, slippage.



GILMER ENDLESS CORD SPINNER BELTS. Built with continuous cord construction to assure smooth and uniform spindle speed.



GILMER CD SPINDLE BELTS. Being vulcanized on the drive, true spindle speeds are assured. More consistent power, less attention, longer wear.



GILMER CONE DRIVE BELTS. Reinforced multiple-jacket edges and rubber-locked internal structure check wear and unraveling of the belt from the action of shifter forks. Longer life in the toughest service.

FOR every drive, from power plant to loom, there is a Gilmer Belt, specially designed to meet the requirements of the job. And each one is a development of extensive research by the Gilmer Engineering Staff, whose close association with the Textile Industry covers many years.

Gilmer engineers are belting specialists with a sound understanding of all phases of power-transmission. Consult them, without obligation, regarding any belting problems you may have. They can show you how to get maximum efficiency by the use of dependable, tight-gripping, slip-free Gilmer Belts.

Gilmer BELTS

OTHER GILMER BELTS include Endless Round Belts for Carding Machines, Endless Cord Spinner Belts for Silk Throwing, etc. All are completely described in the handbook, "Gilmer Belts for the Textile Industry"—a book that simplifies the specifying of belts for a large majority of drives. Write for your FREE copy today.

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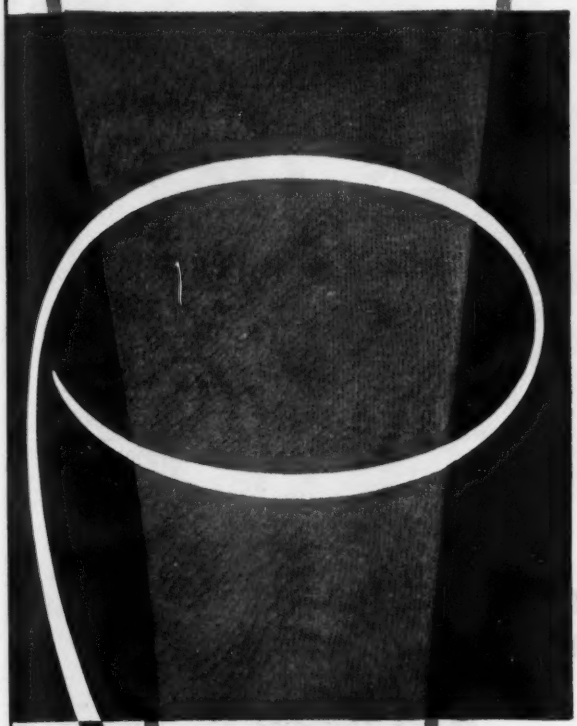
DIVISION OF UNITED STATES RUBBER COMPANY

Troubled with Uneven Dyeing? Try scouring hosiery with Olate.



Uneven dyeing, resulting from inefficient scouring, has ruined the saleability of this rayon stocking.

Uneven dyeing is a trouble-maker in many hosiery mills today. And poor scouring is usually the cause of such trouble.

It is significent that mills which scour rayon hosiery with Olate report little if any difficulty from uneven dyeing. That fact is a tribute to the scouring efficiency of this top quality, neutral, low titer soap.

Olate's cleansing action starts the minute its fluid solutions come in contact with hosiery. Olate rinses freely, and is highly resistant to oxidation, rancidity and odor development. Scouring costs with Olate are low.

If there's a chance that your present scouring agent is causing uneven dyeing . . . slowing up hosiery production . . . try Olate.

PROCTER & GAMBLE

Olate *Safe and efficient for every Textile Soap Usage*

The *why* of better spindle lubrication with

Gulfgem Oil:

It's Alchlor Processed!

GULFGEM OIL gets from Gulf's exclusive Alchlor Process better elimination of unstable hydrocarbons and impurities — superior lubricating value, long life, and high resistance to oxidation.

You get fewer bolster renewals, reduced end breakage, less power consumption, and lower maintenance costs.

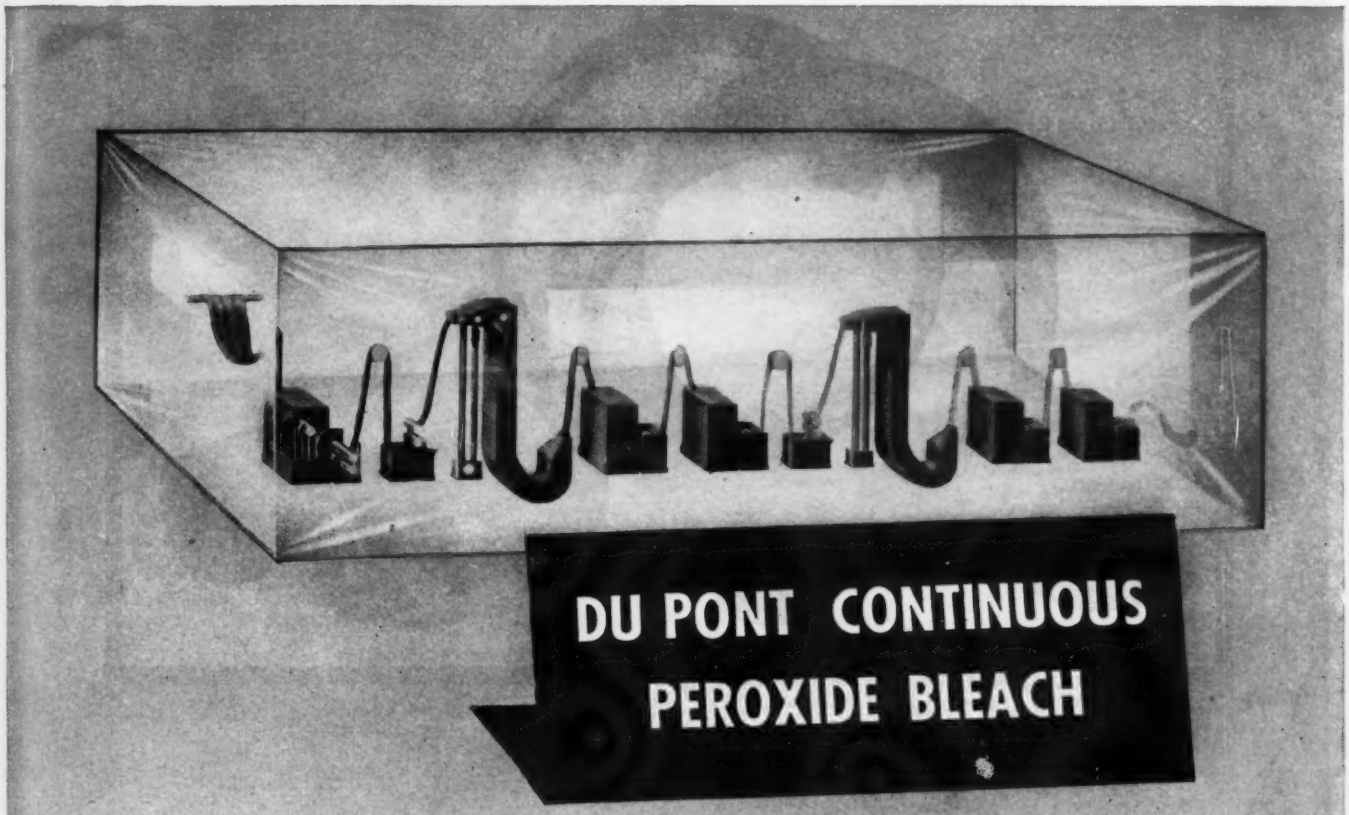
It will pay every mill to learn the full protective maintenance and improved production possibilities of this highest quality spindle lubricant. Ask the Gulf Service Engineer in your vicinity to give you details.

Gulfgem Oil—and the more than 400 other quality lubricants in the Gulf line—are available to you through 1200 warehouses located in 30 states from Maine to Texas. Write, wire, or phone your nearest Gulf office today.

GULF INDUSTRIAL LUBRICATION

Gulf Oil Corporation · Gulf Refining Company · Gulf Building · Pittsburgh 30, Pa.

This is YOUR Post-War Bleachery!



When you plan future improvements for your plant that will return the most in fast production of quality goods at low cost, consider Du Pont's Continuous Peroxide Bleaching Processes!

These systems—now in use in many plants—can be used with cotton and many cotton-synthetic combinations. They are completely integrated units—processing goods continuously from grey to white. They give a *uniform, predetermined* bleach, yet are easily controlled. They're high-speed, high-capacity. They return top-quality production—save steam, water, power, chemicals and labor.

Du Pont developed these continuous bleaching processes as a contribution to the textile industry. With them goes assistance from Du Pont Technical Service, plus the assurance of constant improvement through continuing Du Pont research.

WRITE FOR YOUR COPY of "Du Pont Continuous Peroxide Bleaching Systems." It tells the whole story of typical systems on the job and what they mean in terms of faster production and practical savings. Just address: E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Department, Wilmington 98, Del.

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Bunting, largest producer of Cast Bronze Bearings for Aircraft Engines, has the skill, experience and equipment to make equally fine Cast Bronze Bearings for many other applications. These bearings excell in precision, fine finish and uniform physical and metallurgical qualities. The Bunting Brass & Bronze Company, Toledo 9, Ohio. Warehouses in principal cities.

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BRONZE BEARINGS ☆ BUSHINGS ☆ PRECISION BRONZE BARS

14

AMERICA WANTS PROSPERITY

A BOOK to be published early in April by the McGraw-Hill Book Company carries the provocative title "Prosperity: We Can Have It If We Want It." Its authors, Messrs. Shields and Woodward, state in vigorously challenging terms their conviction that the United States will emerge from war with human, material and technological resources adequate to provide a nation-wide standard of living unprecedented in world history. They present, too, their formulation of the several policies and procedures which must be followed by government, business, and labor if we are to realize our potential for a high and sustained prosperity unmarred by prolonged periods of severe unemployment and business stagnation such as have haunted our economic past.

The specific proposals set forth will elicit both enthusiastic acclaim and acrid dissent, for the book deals in far from gentle fashion with many of the currently fashionable panaceas for assuring prosperity by magic formula. It examines, and discards as effective guarantors of prosperity, whatever their individual merits upon other grounds, programs for public works, slum clearance, subsidizing of small business, foreign loans, social insurance, deficit government spending, redistribution of income, the numerous formulae for monetary management, repeal of the anti-trust laws, or any of the loosely-phrased admonitions that government should do nothing and allow everything to take its course untrammeled by controls of any kind.

On the positive side, the book urges clear recognition of the fact that prosperity, under a system of business enterprise, depends primarily upon the existence of competitive incentives that spur capital investment to provide better tools and equipment, that improve organization and technology to insure continuously increasing productivity per man-hour of work, and that enlarge markets by producing what the consumer wants at lower prices to the end that real incomes may be increased.

In short, prosperity depends upon profitable and expanding business and employment opportunity, so it becomes the part of enlightened government, business, agriculture and labor policy to promote those measures which will forward rather than retard the major aim of expanding production.

However great the room for dissent upon the adequacy, or the phrasing, of the specific recommendations it makes, the approach of this book has one virtue of solid merit. It attacks positively the problem of what steps should be taken to achieve and hold prosperity rather than merely devising a poultice to be applied when and if we run into a decline.

Virtually all responsible spokesmen for government, and for business, labor, and agricultural groups, are agreed upon the goal of prosperity. Moreover, they agree that, insofar as possible, it should be achieved through the effort of private enterprise, with government intervention utilized only as a last resort. But despite this unanimity, almost all public discussion of the problem has concentrated upon the nature, the extent, and the timing of such government expenditures as may be found necessary to combat deflation. Since upon this question there is far from general agreement, our procedure has created an exaggerated sense of divergence in a field in which, so far as fundamentals go, we all are in accord to quite an unusual degree.

☆ ☆ ☆

No confusion should be caused by the fact that the generally current phrase for prosperity is "full employment." The latter phrase merely states the goal in terms of human values, which are good terms in which to state any goal. What matters is that we generally are agreed as to what we mean when we say that we want prosperity or full employment. Not only do we know what we mean, but within very rough limits we can give dimension to our concepts. There are a few whose appraisals are somewhat lower, but most competent estimators set the goals for about 1950 at an average annual employment in civilian jobs of between 55 and 57 million persons, with a gross national product of between $185 and $200 billion measured at 1943 price levels. This contrasts with the 1944 level of non-military employed of 51½ million, and a gross output for the end of 1944 of over $200 billion. It assumes a reduction of the average workweek to 40 hours.

It will take some such levels as these to provide employment for those who seek work, with only sufficient "frictional" unemployment (those temporarily listed as unemployed because of the normal turnover between jobs) to afford reasonable labor-market flexibility to both workers and employers. The non-military employment figures are generally consistent with the officially stated postwar goal of jobs for 60 million workers, since the latter figure is generally understood to be an estimate of the *labor force*, which includes members of the armed services and an allowance for frictional unemployment.

There are a number of reasons why the estimates cannot be figured more closely, and why no one can be very confident even of the validity of the stated limits. The chief points of doubt in the employment estimates relate to how many withdrawals there are likely to be on the part of women, oldsters, and youngsters, who now are in the labor force to a number more than 6 millions beyond normal expectancy; how many men will be retained in the armed forces; and whether the

postwar frictional unemployment should be calculated as approximating the current 1 million or the 3 million so-listed in the prosperous year of 1929. Additional uncertainties cloud the estimates of gross national product. Notable among them is the fact that no one is sure of the war's effect upon man-hour productivity trends, in view of the fact that half of our current output has consisted of products that had no substantial counterpart in our peacetime price or production series.

☆ ☆ ☆

Nevertheless, despite such qualifications, it is fair to say that we do have a general conception of the magnitude of our postwar goals. Although they are well within our production potentials as demonstrated in this war, they are formidably beyond any previous record of peacetime achievement. Only the most sanguine optimism could lead one to expect that they will be achieved without concerted will, planning, and cooperative effort. Only blind recklessness could engender confidence that once attained they will automatically be held, let alone expanded in normally healthful growth.

If we were to follow past patterns, our war-built boom would, after a period of uncertain length, collapse into disastrous depression. The very magnitude of our recent growth would contribute to the depth and duration of the subsequent trough. Yet a fall even to the level of our previous peacetime-peak-year 1939, has been estimated by The Federal Reserve Board to imply unemployment for between 15 and 20 million persons. If human values have importance, that is something that must not be allowed to occur. If business values have importance, we must not tolerate again such losses as occurred from 1930 to 1933, when sales over the four year period were $128 billion less than would have been provided if the 1929 level had held, and corporate profits declined from more than $7 billions in 1929 to an average annual loss of $1 billion over the next four years. A repetition of these things cannot be tolerated—*if foresight and cooperative effort can prevent them.*

☆ ☆ ☆

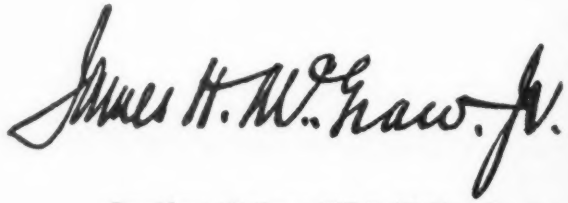
In January of this year Senator Murray introduced in the Senate a bill entitled "The Full Employment Act of 1945." It instructs the President to submit to Congress plans for eliminating both unemployment and inflation, including recommendations for correcting structural defects in the economic system. It provides for a Joint Congressional Committee to consider the proposals of the President, to take testimony from experts and the general public on these proposals or any others it may wish to consider, and after weighing all the facts to submit its findings to Congress. It provides for an advance budgeting of the constituent parts of a full-employment economy, and commits the Federal Government to provide, in advance, for sufficient expenditures (through private contractor channels) to make up for the gap between estimated private expenditures and the amount necessary to assure full employment.

By no stretch of the imagination can The Full Employment Bill, in its present form, be regarded as acceptable to business. Yet it may well present a test of whether or not American business can deal with problems in this area in a statesmanlike fashion. Such statesmanship will consist in demonstrating first, that the Bill is not acceptable because of deficiencies which preclude the possibility of its accomplishing the avowed purposes; and second, that business is able and anxious to offer constructive suggestions for remedying these deficiencies.

It is easy to point to weaknesses in the Bill. To mention only a few of major importance: The proposal to make advance Federal expenditures to compensate for estimated deficiencies in prospective private expenditures is completely impracticable. No one in the country can predict future trends with sufficient accuracy for this purpose; no one can tell what the constituent parts of a really high, *stable* peacetime budget should be, for in our boom-or-bust economy we have no stable pattern to project; no one can tell, within reasonable limits, how much the government should spend *in advance* to assure full employment. The Bill pronounces labor's right to work without defining commensurate responsibilities which it should exercise. It does not define the areas of proposed government expenditure in such a way as to allay business fears of government competition or the general public suspicion of leaf raking. Above all, the Murray Bill is defective in that, despite a somewhat vague pronouncement in favor of forwarding private business activity, it recommends a single specific designed to supplement such activity rather than stimulate it.

The very definition of certain of these faults suggests their remedies. But the positive task of stating how the Bill should be amended in order that it may have effective usefulness is far from simple. Yet it is enormously to the advantage of American business to undertake it. Fortunately, there is a representative group sponsored by industry, The Committee for Economic Development, which has for some time been working intensively upon the problem, and which is excellently equipped to offer sound and progressive advice. It should be used for this purpose.

American business cannot afford to take a negative attitude toward legislation in this field. Some legislation undoubtedly will pass, for the problem is one in which there is a grave government responsibility. But equally there is a comparably important responsibility upon all citizen groups. None of them has more to gain or lose from the rise or fall of prosperity than American business.



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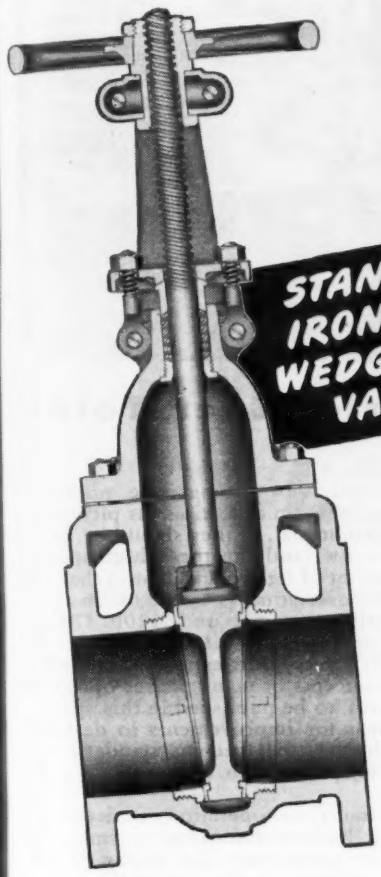
THIS IS THE 34TH OF A SERIES

DEPEND ON CRANE . . . WHEN IT'S PIPING EQUIPMENT YOU NEED

ONE SOURCE OF SUPPLY • ONE RESPONSIBILITY FOR ALL PARTS • ONE STANDARD OF QUALITY

To keep piping at its best, to simplify and speed up deferred replacements—call on the Crane line. You choose from the world's greatest selection of piping materials—in brass, iron and steel. One source—your Crane Branch or Wholesaler—supplies on one order all your requirements. Every part is uniform in quality, backed by a single responsibility. Your whole task from ordering of parts to installing them is simplified—and at the same time you are benefiting by Crane Co.'s 90-year leadership in the field of piping materials. Below is an example of Crane complete lines—in Standard Iron Body Wedge Gate Valves.

Boiler control system for regulating dampers



SERVICE RECOMMENDATIONS: **Crane Standard Iron Body Wedge Gate Valves** with Brass trim are recommended for steam, water or oil lines; all-iron valves for oil, gas or fluids that corrode brass but not iron. Made in O.S.&Y. and Non-rising Stem patterns.

Working Pressures

Size of Valve	Screwed or flanged end valves		Hub end valves
	Saturated Steam	Cold water, oil or gas, non-shock	Cold water or gas, non-shock
2 to 12 in.	125 pounds	200 pounds	200 pounds
14 & 16 in.	125 pounds	150 pounds	150 pounds
18 to 24 in.	*	150 pounds	150 pounds

*For steam lines larger than 16-in., Crane 150 pound Cast Steel Gate Valves are recommended. (For sizes under 2 in., use Crane Clamp Gate Valves.)

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VALVES • FITTINGS • PIPE
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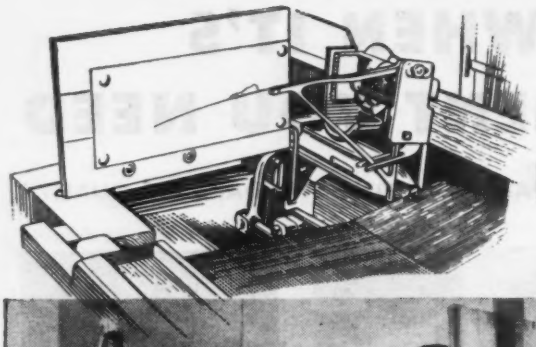

From this mechanical gadget of 1928

to the high-speed camera of 1945...

Here's one of the Greatest Detective Stories Ever Told!

How to measure the motion of a loom shuttle which shoots back and forth like a projectile? That was the problem which C & K engineers first tackled in 1928, with the mechanical device shown at the top of this page. This device recorded, with a stylus, the instant at which the shuttle passed a given point in its flight. Next, earphones were hooked up to a commutator to "hear" when the shuttle shot by. But mechanical contacts didn't work, so photographic experiments began . . . and patiently continued, for years. Available cameras were too slow. Other existing equipment was unadaptable.

So C & K engineers threw the book away . . . went to work designing a camera which would "catch" and show them what they wanted to see. Some time later they got their first pictures, showing the shuttle, at full speed, as clearly as though standing still. Then this equipment, its designers and its crew went onto war work, applying unmatched detective abilities to mechanical mysteries which the armed forces had to have solved without delay. *It helped to solve them.* But, with its crew, it remained (as it still does) a permanent installation in the C & K engineering laboratory, which is "detective headquarters," so to speak.

Today, this unique equipment is beginning once more to search into the hidden secrets of loom operation. Its pictures, both still and motion, are phenomenal, as they should be. For the power-pack develops 10 kw. and the three high-speed lamps concentrate a total amount of light equivalent to that of 30,000 50-watt bulbs. The exposure time is 1–200,000th of a second; and the number of frames per second, 1200. Other cameras may have higher film-speed, but this C & K camera *combines* high film speed with a very short exposure. Literally it is bringing to light new concepts of many phases of loom operation . . . as actual pictures, to be published in this space, will show. And the new ideas for improvements in design, based upon this graphic evidence, will become standard on C & K looms when and if they prove their ability to do one or more of these six things:

Increased speed or continuity of operation . . . decrease operator's work or cost of loom-maintenance . . . improve quality of fabric, or appearance and utility. What better protection could there be for *your* mill?

Crompton & Knowles Loom Works

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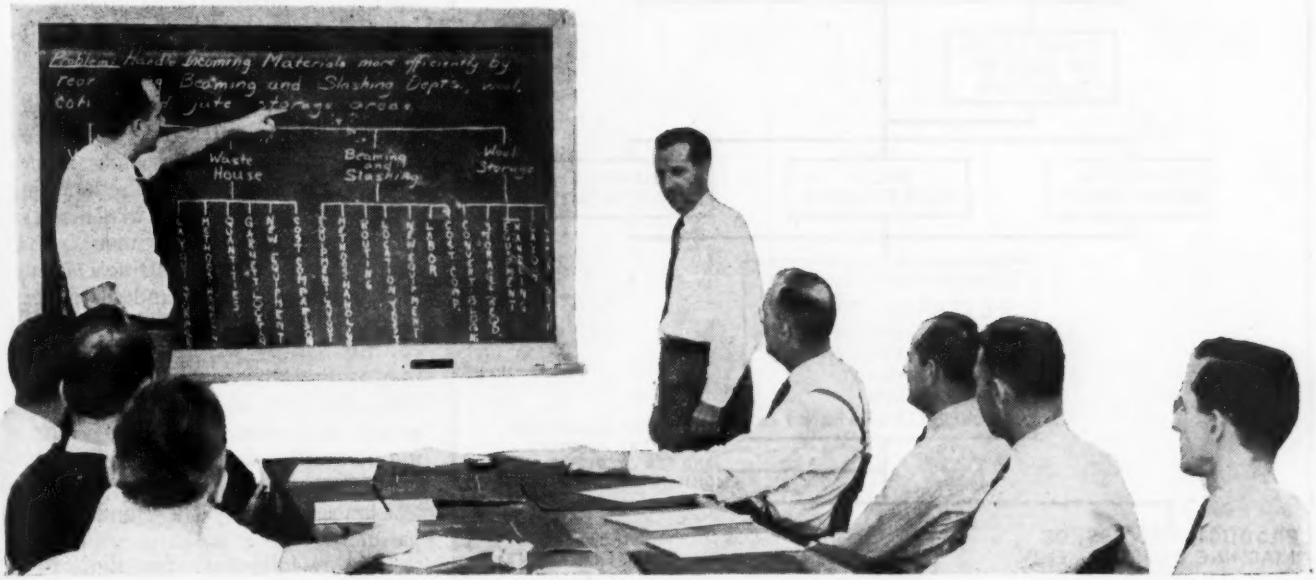
BRIDGING THE GAP between Today's War Weapons . . . and their New Uses in Tomorrow's Looms



Unique Organization Handles PROBLEMS and SUGGESTIONS

By A. JACKSON GREEN
Chairman, Bigelow-Sanford's "War Production Board"

HIGHLIGHTS: "Refreshingly new" program of technical research and mill planning established at prominent Connecticut plant. Prevents ill-feeling and assures constant improvement of equipment and methods. Procedure applicable to any textile mill.

WHEN AN OPERATING EXECUTIVE discovers that technological and engineering improvements or research affecting his departments have been initiated without his knowledge, he is deeply resentful that the plans had not been routed through his office. He wants to know what it's all about . . . who told who, and why . . . and he is entitled to know.

Furthermore, without a definite forecasting of the proposal, he may retard a very worth-while forward step in a better working program.

An alert mill manager will, therefore, see that this cannot happen by making sure (1) that most cordial relations exist between engineers and mill executives and (2) that the personnel members of the organization coordinate completely in each proposed case study. More efficient plant operation will be the immediate result.

Mill managers are also mindful that many suggestions from various sources are constantly being proposed to improve efficiency and lower costs, but they fall by the wayside because of lack of a proper administration program to explore the suggested project and determine its true value as related to the immediate plant operation.

NEW PROGRAM. At the Thompsonville, Conn., plant of the Bigelow-Sanford Carpet Co., Inc., a new program for routing, coordinating, and charting all technical research and mill planning has been set up to attain these objectives. We at the plant believe the plan is refreshingly new for textile

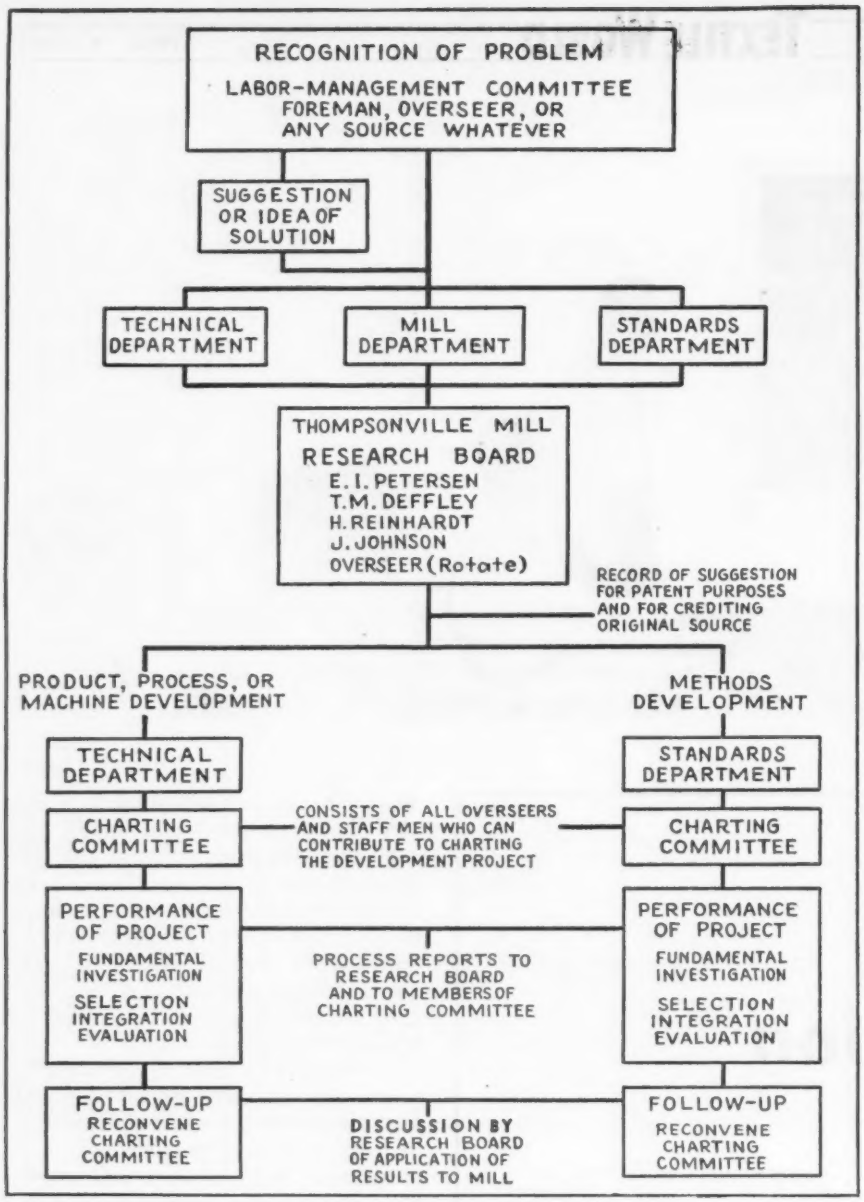


Fig. 1. Organization for considering problems.

mills and that it offers a sure-fire means of solving problems and insuring continuous progress. The following text and the accompanying illustrations explain it.

The chart in Fig. 1 gives an overall picture of the entire program. The reader will find it useful to refer back to it later while reading this article.

The chart shows how a suggestion, idea, or problem which presents itself from any source whatever (regardless of whether it may appear out of line of normal procedure) is filtered through a screening process operated by a permanent research board. This board, which meets monthly, consists of the plant superintendent as chairman, supervisors of the technical and standards departments, and a representative chosen in rotation from the mill overseers. After the screening process, the project goes through one or the other of two routines, depending upon its nature. In other words, if it involves product, process, or machine development, it heads for the technical department; whereas, if it involves a methods development, it heads for the standards department, related departments concurring.

MINUTES KEPT. In Fig. 2 are shown some of the minutes from a meeting of the Permanent Research Board. Project 1, which involves the handling of filling yarn, falls in the classification of a "methods development" and therefore passes to a charting committee assembled by the standards department, although, of course, help is contributed by the technical department. Project 2 involves the strength and efficiency of blanket yarn, and would, of course, proceed to a charting committee assembled by the technical department, with all necessary assistance given by the standards department.

In the following, for illustration purposes, we shall trace the procedure of Project 5 which is concerned with handling incoming materials.

First, a meeting of the regular charting committee of the standards department is called by the superintendent; and, on this occasion, an attempt is made to select the various factors which may have a bearing on the problem. With these factors in mind, the head of the standards department selects the various overseers and staff men who can best contribute to charting the development project and calls a meeting of this special charting committee. The head piece shows a special charting committee at work.

The "minutes" of the charting

Savings Involved According to Various Plans

	Plan #1	Plan #2	Plan #3	Plan #4	Plan #5	Op. Plan #4	Op. Plan #5	Plans #6 & 7
Putting wool into storage	525.00	525.00	525.00	3267.00	3937.00	3937.00	3937.00	2820.00
Take wool out of stores	fixed by rate	fixed by rate	fixed by rate	2100.00	2100.00	3300.00	3300.00	1825.00
Unload cotton & jute	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Starch, gum, chemicals, etc., will be handled onto first floor building #18 for approximately same cost as to present basement storage.								
Store shooks	25.00	-	-	-	25.00	-	25.00	-
Beam transportation costs	649.00	649.00	854.00	854.00	649.00	854.00	649.00	-
Waste House to Building #2 basement in old Raw Stock	3290.00	3290.00	3290.00	3290.00	3290.00	3290.00	3290.00	3290.00
Consolidated storage (16% of help assigned to Receiving and Shipping)	5312.00	5312.00	5312.00	5312.00	5312.00	5312.00	5312.00	5312.00
Total Savings	9851.00	9876.00	8373.00	13215.00	14693.00	15085.00	15563.00	13347.00

Fig. 3. One page of several appearing in a final report.

committee meeting take the form of the chart shown in Fig. 4. (The various symbols are used for visual clarity only.) It will be noted that the various phases of the problem which are to be investigated by the various overseers are clearly indicated and are thus explained.

QUESTIONS ASKED. Standard questions are directed by the engineer in charge to various overseers affected, such as: "What changes are necessary to present equipment? What will be the effect of the change on handling materials? What quantities of materials are involved in the changeover? Is labor available? What safety factors and ventilation are involved?" He also asks for a complete cost comparison as well as for any other pertinent details of the work involved as related to the project in process of solution.

When all items have been charted as illustrated, a clear and complete picture of the problem is presented.

This procedure has the added bene-

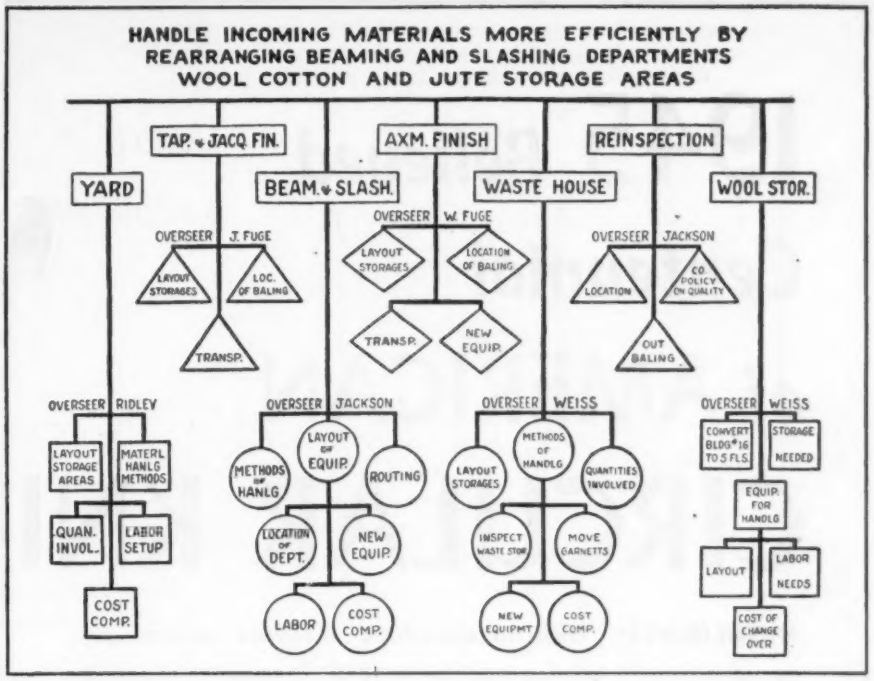
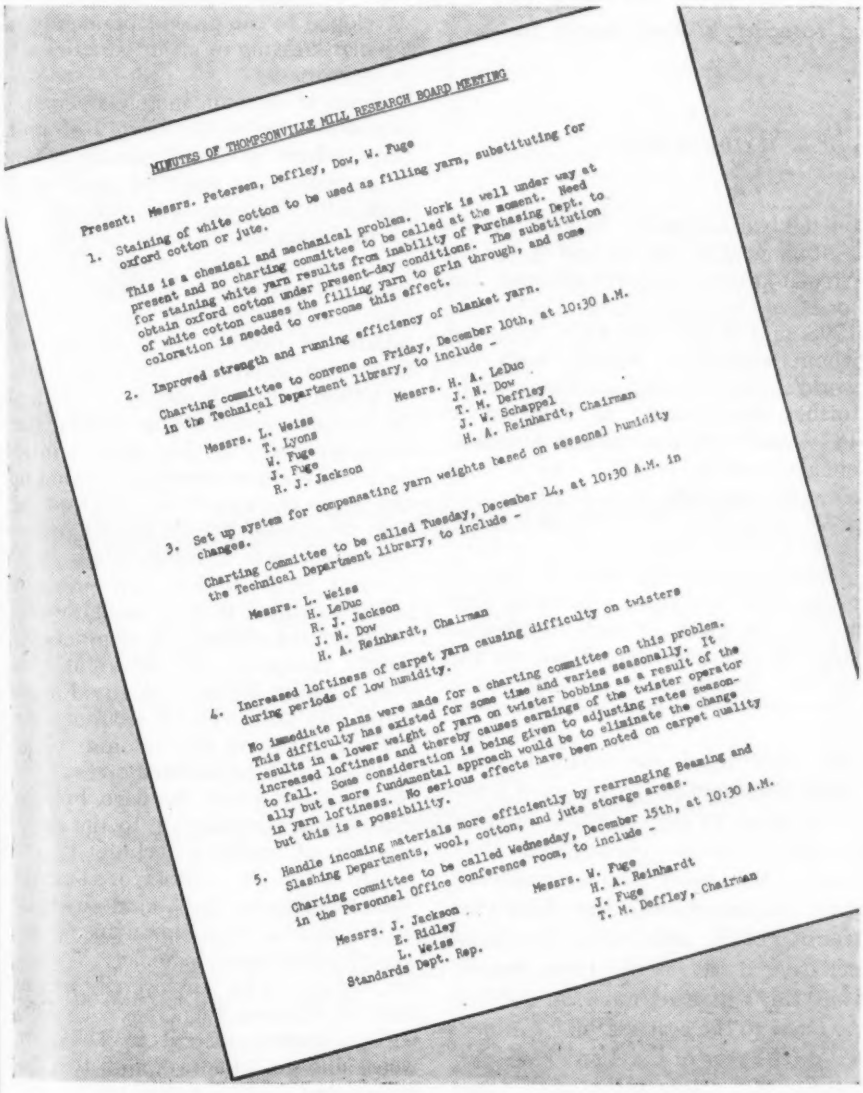


Fig. 4. Relationship of various supervisors and departments can be seen at a glance.



MINUTES OF THOMPSONVILLE MILL RESEARCH BOARD MEETING

Present: Messrs. Petersen, Deffley, Dow, W. Fuge

1. Staining of white cotton to be used as filling yarn, substituting for oxford cotton or jute.

This is a chemical and mechanical problem. Work is well under way at present and no charting committee to be called at the moment. Need for staining white yarn results from inability of Purchasing Dept. to obtain oxford cotton under present-day conditions. The substitution of white cotton causes the filling yarn to grin through, and some coloration is needed to overcome this effect.

2. Improved strength and running efficiency of blanket yarn.

Charting committee to convene on Friday, December 10th, at 10:30 A.M. in the Technical Department library, to include -

Messrs. L. Weiss
T. Lyons
W. Fuge
R. J. Jackson
Messrs. H. A. LeDuc
J. N. Dow
T. M. Deffley
J. W. Schappel
H. A. Reinhardt, Chairman

3. Set up system for compensating yarn weights based on seasonal humidity changes.

Charting Committee to be called Tuesday, December 14, at 10:30 A.M. in the Technical Department library, to include -

Messrs. L. Weiss
H. LeDuc
R. J. Jackson
J. N. Dow
H. A. Reinhardt, Chairman

4. Increased loftiness of carpet yarn causing difficulty on twisters during periods of low humidity.

No immediate plans were made for a charting committee on this problem. This difficulty has existed for some time and varies seasonally. It results in a lower weight of yarn on twister bobbins as a result of the increased loftiness and thereby causes earnings of the twister operator to fall. Some consideration is being given to adjusting rates seasonally but a more fundamental approach would be to eliminate the change in yarn loftiness. No serious effects have been noted on carpet quality but this is a possibility.

5. Handle incoming materials more efficiently by rearranging Beaming and Slashing Departments, wool, cotton, and jute storage areas.

Charting committee to be called Wednesday, December 15th, at 10:30 A.M. in the Personnel Office conference room, to include -

Messrs. J. Jackson
E. Ridley
L. Weiss
Standards Dept. Rep.
Messrs. W. Fuge
H. A. Reinhardt
J. Fuge
T. M. Deffley, Chairman

Fig. 2. Copy of actual minutes of board meetings shows some of the projects considered.

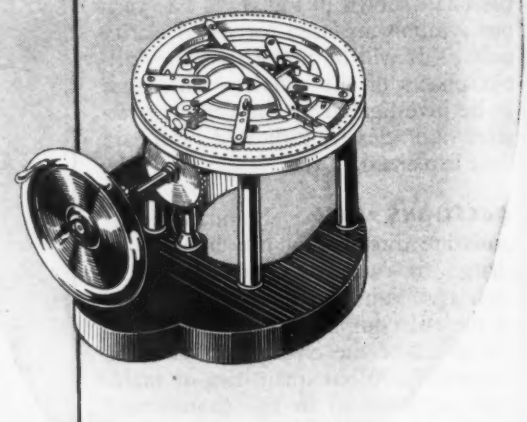
fit of familiarizing each department head with his responsibility to the project as well as giving him a thorough understanding of his relation to the others effected by the project which is under consideration.

Immediately, concerted action develops as the engineers concerned in the problem direct their cohorts into the job of developing facts and using their imaginations to suggest solutions. All factors, even those remotely related to the problem, are considered. Any new discoveries are carefully plotted and studied. At all stages of this investigation, progress reports are sent to the Permanent Research Board. Copies are sent to the various members of the charting committee.

FOLLOW-UP. The special charting committee then reconvenes in what we call the "follow-up" meeting. Here all data are put together into a final report covering all plans which have been proposed to make possible a ready comparison between these plans. The table shown in Fig. 3 is a part of the report. This final report is then returned to the Research Board where the best plan is selected for recommendation to the plant superintendent. At this final meeting, also, recommendations are made for giving proper credit to the man who made the original suggestion.

The superintendent then makes his formal proposal to the mill management, where the final decision rests as to whether an appropriation will be made to permit the project's being carried through.

1945 Believed Centennial of AMERICAN CIRCULAR KNITTING



HIGHLIGHTS: *Hitherto uncredited American inventor produced a circular knitting machine in 1845. Previously recognized first American patents came around 1865. Machine, with output of one sock per hour, could fashion and knit heels. Summaries by technicians show achievements and forecast brilliant future for all branches of knitting.*

By WILLIAM B. DALL, *Managing Editor, TEXTILE WORLD*

ONE HUNDRED YEARS AGO a man named Erasmus French constructed a circular knitting machine equipped with one reciprocating needle. Ten years later he patented this hand-operated device, and, so far as the record is available, it vanished after a brief use by at least one company in Waterbury, Conn., around 1850. In that same decade in England, Townsend invented the latch needle which ultimately made possible the circular knitting machine as we know it today.

The interesting thing about French's invention is the fact that his machine was *circular*, when all contemporary knit products were then being made on flat-bed machines. In fact, his invention may be the earliest American circular-knitting patent, although histories of knitting credit Decroix in 1798 and Brunel in 1816 (both of whom worked in France) with the world's first circular knitting, credit further development to England in 1835, and cite the earliest American circular patents as 1865. Aiken built a circular machine here in 1854.

Working from French's idea of the back-and-forth motion of a sewing-machine-type needle, later technicians might have developed a machine with a complete circle of such needles instead of only one, were it not for the chance development of the latch needle. This needle paved the way for circular machines based upon the up-and-down motion of a circumference of latch needles, which slowly developed to the present perfection of circular knitting in all its varieties and complexities.

Even if French merely opened a dead-end road in the history of knitting technic as far as needle action is concerned, he must be credited at least with focusing attention on the circular idea which came to full fruition not more than 10 or 15 years later and has since then been responsible for the efficient production of billions of dollars worth of hosiery, underwear, outerwear, and yard fabric.

Although French merely reproduced the simple hand-knitting motion mechanically, he was able also to introduce a fashioning effect by picking up two loops at a time when his knitting had progressed to the point where narrowing was wanted. This contrivance seems to link this primitive 1845 machine to the full-fashioned principle, the modern developments of which comprise an important part of the current hosiery industry. French could also knit heels by reciprocating.

Brief notice in the columns of an 1845 almanac, reproduced on the front cover and quoted on this page, brought this curious contribution to the development of knitting technic to the attention of the editors of TEXTILE WORLD. Thanks to the kind assistance of R. W. G. Vail, librarian of the American Antiquarian Society, Worcester, Mass., who discovered for us that an Arasmus French was credited with a knitting patent in 1855, we were able to put two and two together and make a fairly trustworthy four, if one is willing to assume that

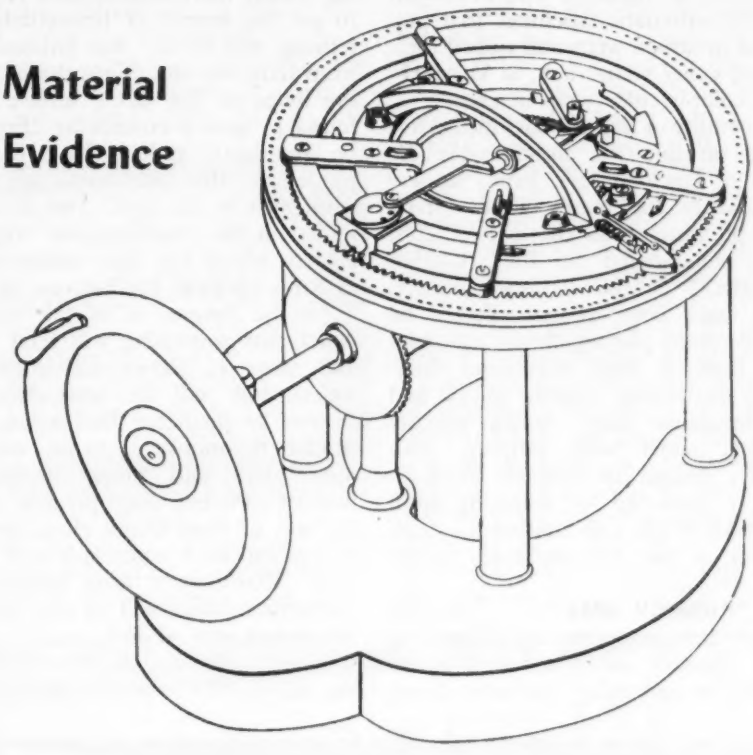
This Was Published in 1845 — *"Rotary Knitting Loom.—Mr. Erasmus French, of Springfield, Conn., has, after much labor and study, invented a machine which knits stockings and hosiery of all kinds of perfect shape, without seam or blemish, with a rapidity and cheapness hitherto unparalleled. Each machine will knit one sock per hour, while one girl can easily tend ten machines, and five hundred machines may be turned by one horsepower. Rev. John Pierpont declares it the greatest mechanical invention of the age. Unlike the clumsy and cumbrous stocking machines of former days, it weighs but three pounds, and may be placed on the centre table of any lady's drawing room. It will knit cotton, woolen, silk, or any fabrick, from the finest to the coarsest."—J. Gruber's Hagerstown Town and Country Almanack, for the year of our Lord 1845, No. XXIV. Printed by John Gruber, South Potomac St., Hagerstown, Md.* [Above quotation carries spelling and punctuation of the original.—EDITOR]

the almanac erred in calling him Erasmus French, as well as in locating Springfield in Connecticut. The fact that French worked in Springfield, Mass., and later in Waterbury, Conn., seems to give easy basis for the geographical error in an item probably reported through two or three hands before getting into print. The fact that the invention was made in 1845 and the patent not taken out till 10 years later is typical of other devices which were developed in the earlier part of the 19th century.

All that we know of French is that he was living in Chicopee Falls, Mass., (adjacent to Springfield) in 1837; that some time later he moved to New York, staying till 1849 when he moved to Waterbury, Conn., which is given as his residence in Patent No. 13,750, dated Nov. 6, 1855. The American Hosiery Co., incorporated in Waterbury in 1853 not only to make hosiery but to make machines for knitting hosiery, used the French invention. This company was out of business when the American Hosiery Co. of New Britain, Conn., was organized in 1868, and had no connection with it. French engaged in the manufacture of ammunition in Waterbury during the Civil War, and at that point the record concludes.

[The short articles which immediately follow sketch the recent technical development of several divisions of the knitting industry and forecast the post-war trend. Arasmus French, along with many better known inventors, is part of the ghostly cohort which has tramped out the road our present-day inventors are following so successfully. —EDITOR]

Material Evidence



The material evidence of Arasmus French's 100-year-old achievement is given in the reproduction of the almanac page on the front cover and the drawing from the patent shown above. To clarify the operation of French's machine, we quote briefly from the patent specification as follows:

"My improvement consists in constructing the machine in a circular form, with an opening in the center, in which an open hoop, (onto which the stitches are looped,) is suspended, when it is sustained by clamps, or holders, in such a manner that two will sustain it at all times, and yet they will be so opened and closed, (by means of an eccentric and cams,) as to allow the loops, or stitches, to slide along to feed the work, and in the manner of taking the loop from one point of the hoop, and forming a new stitch on the other point, by the use of a needle with the eye near the point, (similar to those used in many sewing machines,) while the operation of the needle will feed the work, and the manner of causing the needle to take up two loops (by the motion of the arch bar, which supports the needle in the center,) for the purpose of narrowing, and in so constructing it, that the needle will knit equally well either way, for any desired length of time, by simply reversing the motion of the crank, so that it is perfectly convenient for knitting heels of stocking."

SEAMLESS HOSE

Faces Transition

By JULIAN W. HUGHES

HIGHLIGHTS: *Automatic devices and pattern possibilities gave circular hosiery great growth. Future is involved more with new synthetics than machine development.*

DURING THE 20-YEAR PERIOD which started shortly after the close of the first world war and continued almost to the beginning of the present world conflict, knitting machinery, especially machinery for producing circular hosiery, made rapid and steady progress. The next step seems to be the utilization of new synthetics. First came the machine for producing women's hosiery with an in-turned welt which eliminated the expense of hemming the welt on a separate machine. Next the machine for producing half-hose complete with ribbed top, leaving only the toe to be closed on a separate machine, made its appearance and became very popular. Then followed the device for laying-in and lacing-in elastic thread to make self-supporting tops for half-hose and, to a less extent, women's hose.

Earliest efforts to make circular machinery more automatic were unsuccessful and were abandoned. Perhaps the first noteworthy step was the revolving knitting cylinder introduced in this country by the Hemphill Co., and first used on its Banner machines. A few years later the Standard-Trump Bros. Machine Co. developed the cam-operated segment gear which made "picking" during the narrowing and widening operations of the gores more accurate. Subsequently the Hemphill Co. offered the Banner split-foot machine which produced a neat

suture-seam in split-foot hosiery. It was Scott & Williams who developed the full-automatic machines that produced in-turned welts and ribbed tops. [Front cover shows a S. & W.–HH–PW color-in-color wrap machine.]

Ingenuity of leading machine makers made possible the innumerable designs of fancy hosiery. Fancy hosiery particularly for men's wear, sprang into prominence in the early 1920's, now remembered as the "Golden Twenties" of the hosiery industry. First came fancy designs effected by sinker reverse-plating, then wrap striping, then in rapid succession float-stitch patterning capable of 13 and 25 successive steps, needle reverse-plating, panel wrap striping, and, finally, designs in English broad-rib hosiery produced by changing from rib stitch to plain in continuous steps, known as the links-and-links fabric.

THE "CUSHION SOLE." The pile loop or terry-stitch method of knitting was originally intended as a novel means for patterning; but later it was found more useful as a means of making hosiery more comfortable. At first, to get the benefit of terry-stitch patterning, this hosiery was finished and worn terry-side-out. Since the protruding loops on the fabric surface were found to have a cushioning effect, to be absorbent, and to have thermal properties, the pile loops are now worn next to the foot. This is exemplified in the "cushion sole" type of hosiery which has had immense use in Army goods in the last year or two.

In the future, it is the writer's belief that patterning will tend more and more in the direction of the wales, and will be less elaborate. It may be predicted that nylon, and similar thermoplastic yarns, will be used more and more in circular hosiery. Pre-boarding permits introduction of form-fitting characteristics to legs and heels when knit with such yarn. Elastic yarn from plastics, or synthetic rubbers, will be used in self-supporting tops of socks, anklets, and stockings. These synthetics will be the feature of the postwar market.

FULL-FASHIONED
Problems Multiply

By MAX C. MILLER

HIGHLIGHTS: *Satisfactory heels necessary for continuous-process stockings. Machine obsolescence sets pent-up call for new equipment at high level. Mills should effect improvements in existing equipment as early as possible.*

THE FULL-FASHIONED hosiery industry is likely to find itself in a disturbed condition in the postwar period when it tries to function in the normal manner. While the writer has no solution, it is hoped that merely bringing a number of the disturbing factors to light may be helpful.

To reduce the cost of producing full-fashioned hosiery, many producers, shortly before and after Pearl Harbor, resorted to the knitting of so-called round or bag heels. The basic difference between heels of this type and regular full-fashioned heels is that the latter are formed while no fabric is knitted at the instep, and, with the heel fabrics somewhat longer than they are wide, they provide enough material properly to fit the ball-shaped heel without strain at the heel corners. This strain would result if the heel areas were relatively square; that is, as wide as they are long, as is customary in the round or Niantic heels.

The bag heels on full-fashioned hosiery are formed by knitting progressively on more needles, and then on fewer needles at the selvage edges, while continuing to knit across the instep. Such heels are not new in the art. There were patents relating to them as early as 1878, for it has long been the aim of inventors and builders of full-fashioned machines to form heel fabrics as a continued process of leg and foot knitting. With the bag heel this continuous process can be accomplished with only minor machine alterations. However, additional courses are knitted at the instep, equalling the number of courses in the heel. This produces 1½ to 2 in. more instep fabric lengthwise than is produced during the process of knitting regular rectangular English or French full-fashioned heels. The excess instep fabric precludes an attractive appearance at the ankle.

SELECTION OF PROCESS. For mills which have retained their footing equipment, all that will be required is to go back to the separate legging and footing process, but in many instances where footers have been junked, the problem will be much more difficult, because new footers can not be used commercially with old leggers. The mechanical condition of the footers must be like the mechanical condition of the leggers, and machine age has much to do with this.

There are, of course, a number of processes to which mills may resort. In one such process, the legs and feet are knitted without heels, and then the heels are inserted and joined in a later process, preferably by the use of heeling machines. All such processes add to machine overhead and production costs, as is the case with machines in which the legs, heels, and feet are knitted as a continued process, when the inner heel edge must later be joined to the first sole course by a looping process.

Unquestionably, a number of new processes will be evolved in which legs, heels, and feet will be formed in one operation, with the heels rectangularly formed, without knitting at the instep. In fact, such machinery has been evolved for Gotham Hosiery Co., as noted in the November, 1944, issue of TEXTILE WORLD. This particular evolution produces complete hosiery, with little increase in production costs over bag heels, and permits use of existing leggers with reasonable additions.

It is extremely important in the postwar period to be able to use existing equipment (even though somewhat altered) because the new-machine productive capacity of this country is not adequate to take care of the abnormal obsolescence now existing. The present 16,000 machines required to produce consumers' demand are at least 70% obsolete from the machine age and gage standpoint. Since 1930, only about 4,000 new machines have been installed, so there is a great pent-up demand for new machinery which machine productive rate here cannot fill for many years.

MODERNIZE OLD EQUIPMENT. Old full-fashioned machinery can be rebuilt, regaged, or otherwise modernized; but in such cases there will be faced the shortage of machine shops familiar with this kind of highly specialized work. The public will be clamoring for nylon hosiery, which cannot be produced satisfactorily un-

less the machine is in tiptop condition.

What the industry should strive for is to bring about a greatly increased full-fashioned machine productivity in this country; to do what can be done now to modernize and otherwise improve existing equipment; and especially to evolve practical devices which may be applied to existing machines, with which it will be possible to produce acceptable leg, heel, and foot hosiery, so that production costs can be kept low, at least on machines under 51 gage.

UNDERWEAR Expects Only Gradual Changes Postwar

HIGHLIGHTS: *Last ten years was a period of gradual evolution following many changes after World War I. Current trends may continue, with refinements developed for war service.*

PERHAPS THE UNDERWEAR INDUSTRY is on the threshold of another period of change, but most members of that trade do not seem to think so. The ten years before the war were relatively stabilized years as far as types of garments in demand and machines to make them were concerned, and current trends are likely to continue postwar.

After World War I, however, there was a cycle of change and upheaval—the standard balbriggan for men temporarily gave way to nainsook; the fleece-lined cotton garment gradually diminished in favor of lighter raiment, as did the once widely worn woolen underwear; long drawers gave way to short, and shirts became sleeveless; the union-suit threatened to eliminate two-piece; women's underwear evolved from cumbersome cover-alls to delicate brevities.

The last ten years have witnessed progress, though not so revolutionary as the changes just listed. The gains have been along the lines of refinements in manufacturing process and garment construction. In men's shirts, fine ribs have gained dominating place. Broadcloth shorts are the unquestioned standard for lower halves of two-piece outfits, though interesting knitted items have been designed which have gained a degree of acceptance. In the machine field, higher speeds have been accomplished by more effective stop motions, better yarns, and closer tolerances in machine manufacture. Products of warp-knitting for women's underwear have made inroads on circular-knit items, though the latter dominates the men's garment field. The introduction of color into men's garments has been tried without great success. Underwear manufacturers have, however, branched into somewhat new lines in the polo and the basque shirt in which color, whether piece-dyed solids or yarn-dyed patterns, is a feature. Fleece-lined underwear mills have found outlets in sweat shirts.

Foremost among the war-born improvements is the recent development of a preshrinking process for knitted cotton fabric. Garments cut from the preshrunk material have been found to shrink only an additional 3 to 6% against shrinkages of 14 to 19% in untreated materials after launderings.

Although the war seems to be approaching its conclusion in several theaters, there are improvements for comfort and health still in the laboratory under military direction. The offering of these improvements on the civilian market postwar is expected to broaden and stabilize demand after the first pent-up buying spree is over.

Circular-Knit OUTERWEAR Has Bright Future

By EDWARD GROSSMAN, *Grossman Bros., New York*

HIGHLIGHTS: *Production on latch-needle machines has been speeded up; variety of fabrics from spring-needle machines multiplied. Gains in quality foreshadow wider markets.*

THE WAR HAS CREATED a tremendous void in the field of circular-knit outerwear which will take some time to fill. In addition to this assured demand, technical improvements in knitting machinery, more aggressive sales methods, more imagination in dyeing and finishing, all promise a bright future for the outerwear knitter.

In the last 10 years, the feeds on latch-needle machines (such as are used for polo shirting) have increased from 12 to 64 with resulting increase in production per machine. In addition to knitting horizontal stripes, it is now possible to knit vertical stripes plus combinations of each. Not only plaids, but various types of figures and designs, heretofore possible only on complicated jacquard machines, can now be achieved on the new improved latch-needle machine.

Scarcity of raw materials during the war period has fostered the idea of using different types of yarn. Whereas, formerly manufacturers were prone to use yarn of one type—cotton, wool, or rayon—it has lately been found that various mixtures of the three fibers can be handled to advantage. The present situation has forced the knitter to become more ingenious.

Dress and blouse fabrics are for most part made on spring-needle machines on which there has been little technical improvement. However, the knitter has found these machines capable of making many fabrics formerly unknown to him. The fact that in making block-wheel cloths much of the fabric stretch and give can be eliminated has paved the way for increased demand for knitted overcoats and topcoats.

Mills making knit wool dress goods usually rewind their cops or cones on bobbins for use on spring-needle machines, as this package allows more yarn on the machine at one time. Also many defects, weak places in the yarn, and the like are found and remedied in the rewinding process, which aids production on the knitting machine. Without good winding, the knitter will be faced with poor quality work and low production. On latch-needle

machines, the yarn is usually run off from the packages as supplied by the yarn mills. It is not too much to expect that the yarn producers in the postwar period will so improve the quality of their yarns that rewinding will not be necessary.

Although the knitting industry has lacked capable research facilities, there is now a definite trend counteracting this. Manufacturers are becoming more progressive, and are demanding more of themselves and their equipment. Their products are already widely used in the fields needing the attributes of stretch and elasticity. Light-weight knit goods which will not stretch will open unlimited fields.

COMBINATION
Knitting Is Versatile

By RAYMOND KRETSER

HIGHLIGHTS: *Almost any type pattern or fabric may be produced. Each needle can have its own yarn supply. Machines make 70 to 80 yd. per hr. of 54- to 72-in. fabric.*

COMBINATIONS of warp and filling knitting have been recognized for some years for their versatility as to pattern, texture, and use. Recent improvements in knitting principles in this field now make possible the creation of knitted fabrics to meet almost any use-requirement, and many of these fabrics are held to be superior to woven materials. Already the type of machine described in the February and April 1944, issues of T. W. is in use in several mills on quality dress, suit, and sportswear fabrics in 54- to 72-in. widths and in 50 to 60-yard pieces without imperfections.

The latest development in equipment to produce this combination construction comprises a circular knitting machine which will knit individual stitches vertically (walewise) or horizontally (coursewise), using individual yarns for each individual needle on a cylinder large enough to produce the 54- to 72-in. fabrics. Each of the needles, as stated, is supplied with yarn from its own yarn spool with its associated guides and tensioning device, and arranged so as not to tangle in the initial threading or in the knitting when the patterning attachment causes one or more yarns to cease to knit while adjacent yarns make an individual stitch or several stitches as demanded by the pattern. By the individual yarn spool arrangement, colors and designs may be quickly changed without the added operation of making up a warp beam.

Some knitters who have admired the products of the combination warp and filling knitting machines have felt that these machines were too complicated to operate and produce commercially good fabrics. It has been asserted that imperfections were frequent, but overcome or covered up to some extent by fulling and napping the fabrics. However, the latest machines are now disabusing these old beliefs.

In the last ten years there have been great increases in the amounts of knitted fabrics sold to the garment trades, and the outlook is for a considerably greater increase in the next ten years. It is reasonable to expect substantial inroads on woven fabrics when the possibilities of these relatively new machines and fabrics made on them are more generally known. Modern circular machines are currently operating at the rate of 1200 stitches or courses a minute, which rate gives a machine production of about 70 to 80 yd. per hr. The writer predicts that machines of similar type will be producing fabric for a multitude of uses at this same high speed or perhaps even faster in the postwar period.

WARP KNITTING
Reaches Turning Point

By T. H. JOHNSON, American Viscose Corp.*

HIGHLIGHTS: *Tricot machines, called leader of warp knitting, permit fastest method of converting yarn into cloth. Increased productivity in last 10 years is over 100%.*

THE SEVERAL TYPES of knitting machines which fall into the broad classification of warp knitting have the common characteristic of using one or more warps for their yarn supply, but in other respects they differ from each other in design, method of operation, and fabrics produced. By far the most important machine type is the tricot—in number of machines in place, in versatility of fabric range, in amount of production, and in the possibilities for further development.

In addition to the tricot machine, other well-known types of warp knitting machines are:

1. The milanese, which differs from other warp knitting machines in that the threads are caused to traverse in both directions continuously. Milanese fabrics have a fine texture and considerable elasticity, but are relatively costly to produce because of the slow rate of production.

2. The plain raschel, which employs latch needles in one or two needle bars, is used chiefly for coarse gage fabrics for neckwear and millinery.

3. The Kayloom, a plain raschel machine to which have been added attachments that permit laying filling threads across the fabric for stabilization or for decorative effects.

4. The jacquard raschel, which is a spring-needle machine having long, flexible thread guides which may be deflected by means of a jacquard attachment. The guides so selected thus fail to lay a thread around their regular needles, and a small hole in the fabric results. Intricate drop-stitch patterns can be obtained.

5. The Marratti machine, a circular warp knitting machine which can produce both tricot and milanese fabrics in tubular form.

6. The simplex machine, which is a tricot machine with two needle bars and which produces a fabric with a double face. The cloth is used chiefly

(Continued on page 202)

*Excerpts from paper delivered March 24 before the Textile Society of Canada at Montreal.

Revitalize LIGHTING in Your Knitting Mill

HIGHLIGHTS: *Fluorescent lighting ups illumination level almost two times. Small-diameter conductor drawn into embedded conduits permits lighting increases of up to six times.*

By EARLE MAULDIN, *Southern Editor, TEXTILE WORLD*
and HAROLD E. REED, *Assistant Editor, TEXTILE WORLD*

Suggested Lighting Intensities for Hosiery Mills

Department	Foot-Candles
Knitting:	
F.F. or cir. knit	50
Gray goods processing:	
Looping	75
Seaming	75
Inspection	100
Finishing:	
Pairing	75
Mending	75
Inspecting	100
Folding	35
Boxing	35
Boarding	35
Dye House:	
General	30
Laboratory	100

AVERAGE LIGHTING ALLOWANCES for general industrial buildings now being constructed are running 50 foot-candles, whereas buildings constructed over ten years ago have lighting allowances of about 10 foot-candles.

GOVERNMENT REGULATIONS. Knitting mills considering new lighting installations today in plants that were built ten or more years ago may find that an overall general illumination of about 35 foot-candles is all that can be expected without revamping the entire lighting system and installing heavier wiring to take the increased loads necessitated by higher levels of illumination. Present wartime restrictions permit the installation of lighting fixtures under a AA-2 rating as a minor capital addition, providing that it does not exceed $500. Where the capital addition involves construction, authorization to construct must be obtained to the extent required by Conservation Order L-41, or by any other regulation of the WPB.

Those knitting plants operating on war orders, which have reason to believe that the installation of modern lighting will materially aid their production, may obtain authorization for such installation by getting approval of the procurement division of the armed forces issuing the procurement order to the mill. Under this condition the $500 limit does not apply.

PLANNED LIGHTING. Light-engineering in knitting plants, as well as in other textile mills, is directed toward improvement in quality of the product and reduction of rejects, reduction in worker fatigue, reduction in accident rate, and compensation for the poor vision of older workers.

Methods of achieving these purposes usually involve several considerations such as balancing the lighting, obtaining correct painting, and the like. After determining the general level of illumination for all rooms of the plant,

The earlier lighting system at Shannon Hosiery Mills provided from 8 to 12 foot-candles and had six 100-watt fixtures per alley. Their present lighting installation provides 70 foot-candles and has 24 fixtures per alley. Walls are a light blue, dado a dark blue, and ceiling is painted white.

Photo courtesy of Georgia Power Co.

and such items as the rated capacity of the present wiring and the spacing of the present lights, illumination levels for specialized operations must be considered. With only the substitution of fluorescent lights to replace incandescent lights of the open type, it is possible to obtain almost double the foot-candles.

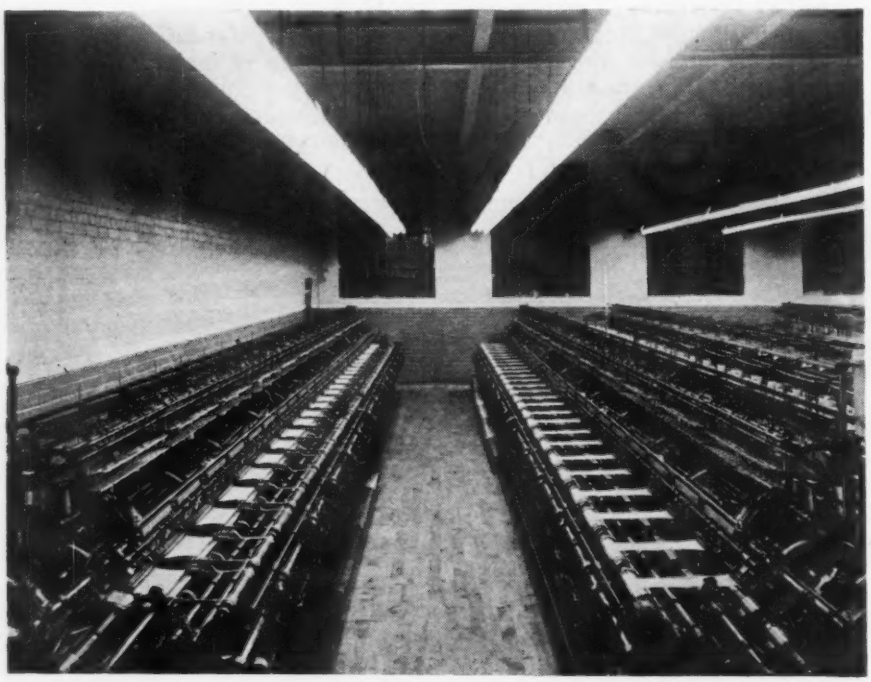
For example, if the mill was wired for 1 watt per square foot, an illumination of 7 to 9 foot-candles could be obtained with incandescent lights. If the only change was replacement of lamps and fixtures with fluorescent equipment, an illumination of 12 to 15 foot-candles could be obtained, providing the ceiling and the walls were repainted white. If the mill desires to replace the wire in its lighting conduits with wire of greater capacity, it would be possible to increase the level of illumination to at least 30 foot-candles. The possibility of this improvement is discussed later.

IDEAL LEVELS OF ILLUMINATION. While meeting ideal levels of illumination are out of the question in many knitting plants today, a comparison of present levels with those suggested will provide material for postwar consideration. The accompanying table indicates the ideal levels that have been suggested by a lighting authority.

Continuous lines of 48-in. double-tube fluorescent fixtures, mounted about seven ft. above the floor and slightly in front of the needle bar of full-fashioned machines, will give excellent results and will eliminate troublesome shadows. This arrangement will develop approximately 60 to 79 foot-candles at the working place.

One of the most trying tasks in hosiery manufacture is placing the stitches rapidly and accurately on the looper points. For this work individual desk-type fluorescent or incandescent fixtures should be mounted close to the machine and arranged so that there is one lamp for each machine. If placed about 18 in. above the looper with the reflector tilted to direct the light on the work, glare is eliminated and an intensity of 75 foot-candles obtained.

Another point where high intensity will increase production and pay dividends is at the seamers. One industrial type fluorescent fixture mounted about 36 in. above each seamer, using two 40 watt tubes will give 100 to 125 foot-candles and make easy an otherwise difficult operation. High intensities, ranging from 80 to 150 foot-candles, might be used to advantage for inspection operation where it is important to detect runs, imperfections in stitch, and other defects. Then, the color quality of light is of importance to match stocking colors. The required intensity in the dye house will depend on the colors being run, but it is safe to assume that there should be nearly 70 foot-candles in the average plant. At some plants all color testing and matching is done in the laboratory in which case a high intensity is required, whereas 30 foot-candles would suffice in the dye house.



Two 40-watt lamps in fixtures mounted in continuous rows about nine feet above the floor provide an intensity of 70 foot-candles at the hosiery machines at the Shannon Hosiery Mills, Inc., Columbus, Ga.

POSTWAR PLANS. Knitting mills contemplating lighting changes after the war with the thought of increasing their levels of illumination to approximate those suggested in the accompanying table will have two methods of procedure. Both methods have the same purpose, namely, to permit the addition of heavier lighting loads and increased number of circuits.

One means for accomplishing this purpose is a complete rewiring job, or a revamping of the existing wiring system so as to make available a greater capacity in watts per square foot of floor space. If existing wiring in the mill is of the exposed type, little difficulty will be encountered. However, if conduits are in concrete or are embedded, the operation of rewiring the mill is not quite so simple.

SMALL DIAMETER WIRE. Development of a small diameter electrical conductor having a thinner insulation but higher dielectric strength while retaining the same size copper thus permitting higher temperatures, has been approved for redrawing purposes by the National Electrical Code. It is sometimes referred to as "small diameter wire" of which there are about four types, known in the trade as RM, SN, and the like. This wire may be drawn in the old embedded conduits without injury to the walls and ceilings. With this wire the lighting capacity of a knitting mill may be increased at moderate cost. In one industrial installation, after first painting the ceiling and walls white, small diameter wire permitted the lighting to be upped six times.

It is believed that this type of wire holds the key to economical lighting for those knitting mills that can take advantage of it. More wires can be pulled into the given conduit, or a larger size wire may be pulled in to provide increased current-capacity. As an example, using small diameter wire, seven No. 10 wires can be pulled into a ¾-in. conduit to provide 6,000 watts and still be within the National Electrical Code.

If a lighting system provided about 18 foot-candles, with the painting of the wall and the ceiling and the installation of fluorescent lamps the lighting may be upped to about 35 foot-candles. However, if small diameter insulated wire is then installed, the foot-candles of the overall illumination level may be increased to about 55. Such a system comes well within the suggested recommendations. Aside from providing higher wattage, more outlets may be provided, and better voltage regulation obtained by a decrease in voltage drop.

Check CONDITIONING in Knitting Plants

HIGHLIGHTS: *Uniformity of atmospheric conditions required when knitting synthetics. Air conditioning has reduced cost of seconds in full-fashioned mill by 10%. Conditioning costs run about 2% of manufacturing.*

By HAROLD E. REED
Assistant Editor, Textile World

KNITTING PLANTS will, in the post-war period, handle many of the newer and varied synthetics, some which have not been obtainable by the majority of knitting mills because their development and use has been exclusively for war purposes. Knitting mills, prior to the war, were handling nylon, but few mills have worked with Vinyon. Both of these fibers require carefully controlled conditions of humidity and temperature during knitting, in fact the maintenance of uniform atmospheric conditions for these fibers is of much greater importance than similar control for yarns of natural and vegetable fibers.

RELATIVE HUMIDITY CONDITIONS. Recommended conditions of humidity for obtaining ideal manufacturing operations are given in the accompanying table. A difference of opinion exists among air conditioning experts as to the correct percent of humidity to be maintained. Accordingly, it is advisable for the mill to vary those figures given in the table slightly to find the humidity which produces the best working conditions. Experience has proved that it is not always the actual percentage of humidity which improves operation, but that it is the uniformity of humidity and temperature that counts.

HUMIDIFICATION VS. AIR CONDITIONING. Humidification usually involves the control of uniform relative humidity in the air and an attempt to keep a fairly uniform temperature in the mill. With some types of humidification, as shown in Fig. 1, a certain amount of evaporative cooling takes places and tends to lower slightly the air temperature on hot days, making the working conditions slightly more bearable. True air conditioning involves refrigeration, as shown in Fig. 2.

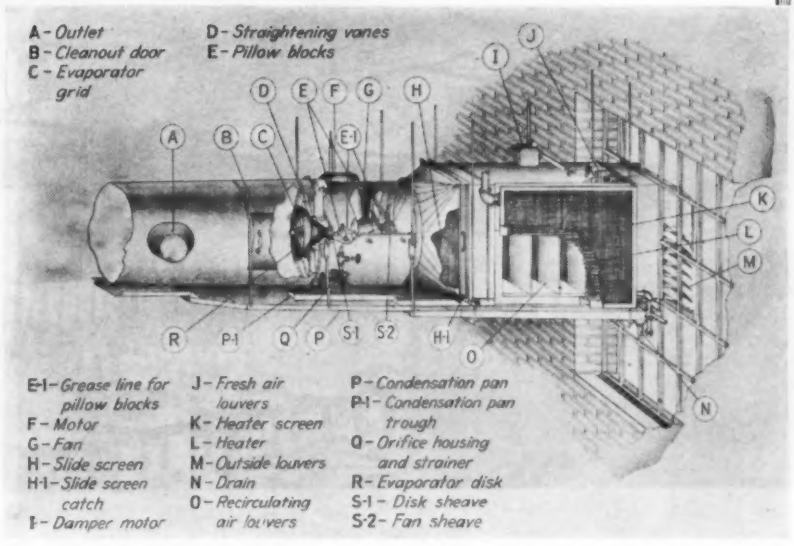

A - Outlet
B - Cleanout door
C - Evaporator grid
D - Straightening vanes
E - Pillow blocks
E-1 - Grease line for pillow blocks
F - Motor
G - Fan
H - Slide screen
H-1 - Slide screen catch
I - Damper motor
J - Fresh air louvers
K - Heater screen
L - Heater
M - Outside louvers
N - Drain
O - Recirculating air louvers
P - Condensation pan
P-1 - Condensation pan trough
Q - Orifice housing and strainer
R - Evaporator disk
S-1 - Disk sheave
S-2 - Fan sheave

Fig. 1. Diagram of duct-type humidifying system which is the most suitable for hosiery mills.

In the New York, New Jersey, and Pennsylvania section, where the summer temperature average runs from 80° to 85° F. and the relative humidity from 42% to 48%, humidification alone may be employed. During the summer, the evaporative cooling obtained from humidifying will offer a limited degree of employee comfort in most processing operations found in knitting mills. During the winter, the humidifying system will tend to correct the usual 15% to 25% r.h. found in heated buildings. Hence, the humidifying system will tend to produce uniform atmosphere conditions.

Working conditions in the South may be greatly improved by complete air conditioning. Temperatures of over 100° F. may be reduced to about 89° F., a much more workable condition. Aside from the employee-comfort angle which will produce a material increase in production, other benefits will be derived from air conditioning.

Actual experience in a hosiery mill has shown that when the mill is completely air conditioned, a reduction of 10% is obtained in the number of seconds made. Needles on the machines do not gum as quickly and kinked yarn is practically eliminated. Variation in length of hosiery is overcome; whereas, it formerly was as much as two inches. Then, the operation of packaging hosiery in cellophane is made easier, as the tendency of the packaging to stick prior to wrapping the stockings is reduced.

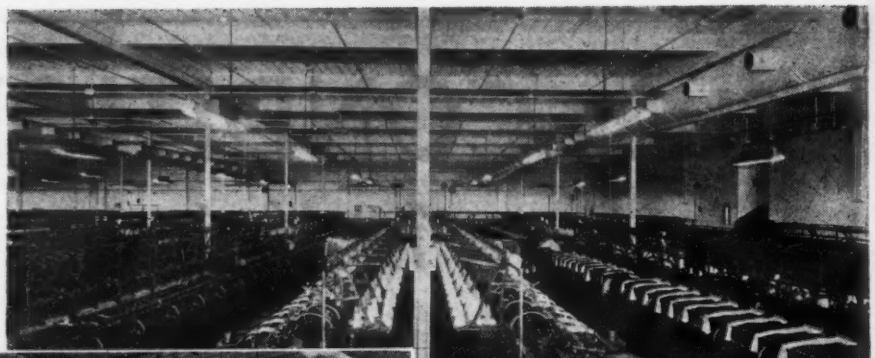
While humidity conditions required

Suggested Relative Humidities for Knitting Mills

Fiber	Operation	Relative Humidity
Cotton	Knitting	65%
Acetate Rayon	Throwing	50%
	Knitting	55%
	Processing	50%
Cuprammonium Rayon	Throwing	55%
	Knitting	65%
	Processing	55%
Viscose Rayon	Throwing	55%
	Knitting	65%
	Processing	55%
Nylon	Throwing	45%
	Knitting	50%
	Processing	45%

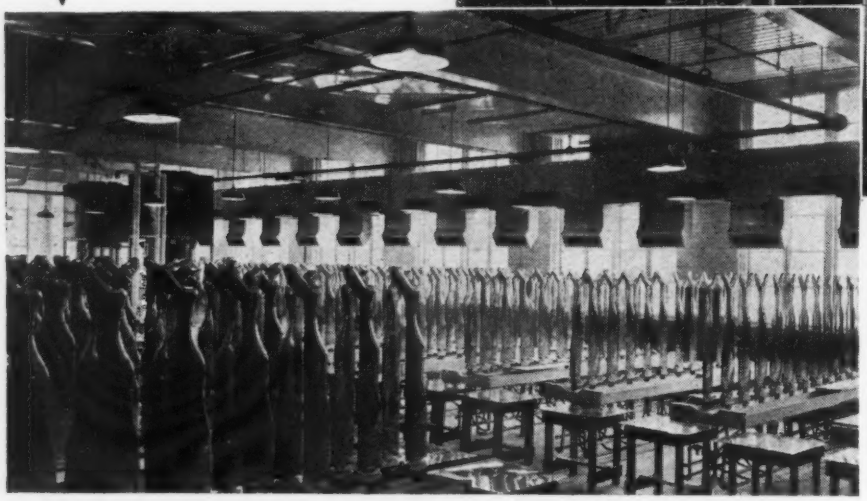
Humidification in this full-fashioned hosiery mill has eliminated the need for boxes for conditioning the cones of yarn. →

Photo courtesy of The Bahnson Co.



Flow of air is directed by the duct formation and by adjustable grids in this air-conditioned boarding room. Equipment was designed to maintain a humidity range of 45% to 60% at temperature of 80° to 85° F.

Photo courtesy of Carrier Corp.



in a knitting plant vary from those of a weaving mill, those required for most synthetics are close to the conditions most comfortable for the employees.

EQUIPMENT. It is advisable when installing an air-conditioning system to have equipment of sufficient capacity to permit flexability of temperature and humidity over a range which will permit operations on a wide variety of synthetic fibers. Such a system will permit experimentation to work out the best mill conditions and also to handle the newer synthetics as they become available.

Choice of a type of compressor unit will generally be handled by the contractor making the installation. Undoubtedly, Freon equipment will be used, as it is best suited for small and medium-sized installations found in the knitting industry. Also, such equipment has given fairly care-free service in mills.

Location of the compressors, condensers, and auxiliary equipment must be considered. A knitting plant of one-story construction may best place the equipment in a penthouse on the roof. If the building is multiple story, the unit may be housed in the power plant or in the basement. The coolant is piped to the ducts if numerous air intakes are employed, as shown in Fig. 2. When a central-station unit is used, the compressing equipment is located beside the unit.

Knitting plants located in smoky industrial areas will want to have a electrostatic unit for electrically removing smoke and dust particles from the air. Air-borne particles of dust, soot, pollen, and smoke as small as 1/250,000-in. in diameter may be removed electrostatically. Smoke and similar particles cannot be removed by filters and will cause dirt and streak marks on the fabrics. It is stated that this apparatus will remove up to 90% of all air-borne particles from the air. The electric-cleaner takes the place of the usual filter when used in an air-conditioning unit.

UNIT COSTS. One hosiery mill which has installed air conditioning in all of its rooms has a refrigerating unit with a capacity of one ton for every 1,700 cu. ft. of space. Operating cost has run about 2% of the manufacturing costs.

Some hosiery mills find that their manufacturing costs for seconds run about 5%. If air conditioning will reduce the cost of seconds by about 10%, as some mills have found, then this one saving should practically cover the operating costs of air conditioning, not to mention the other savings to be found.

It appears that air conditioning will, through savings, cover its own operation costs; but many of the benefits obtained from it cannot be calculated —such as increase in employee morale, improvement in product quality, and like benefits.

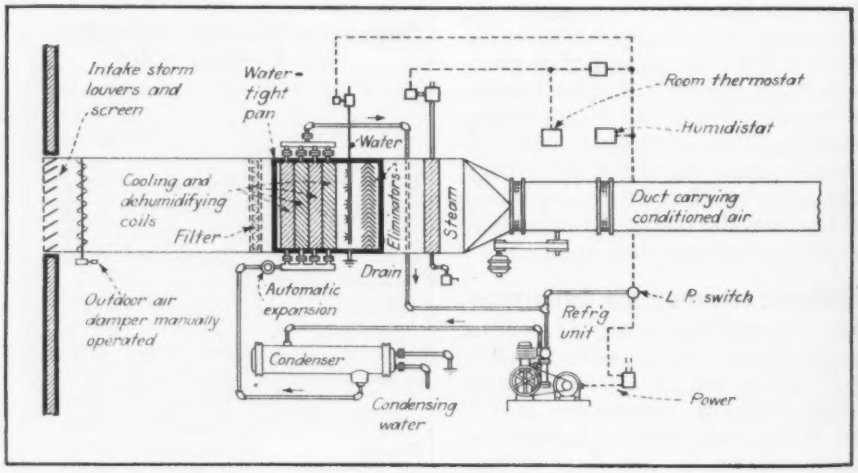


Fig. 2. Essential units in an air-conditioning system for use in a knitting plant. The units remain practically the same in both the duct-type and in the central-station equipment.

COTTON SPINNERS—
Look to Fundamentals

HIGHLIGHTS: Selection and preparation of cotton is basic. Travelers, roll coverage, draft, and twist all influence spinning. Keeping humidifiers functioning effectively requires frequent attention. Test and check for quality and production.

By HORACE L. PRATT

Columbia Mills, Columbia, S. C.

WHEN ONE CONSIDERS the vast amount of material which has been written concerning the spinning operation in a cotton mill, this question might arise, "Is there anything else to be said on this subject that has not already been covered?" The writer, for one, does not believe that our studies in the field of spinning are completed; in fact, time may show that we have barely scratched the surface. But even so, a repetition of some of the things that we already know about this process is not amiss.

No amount of good spinning can correct bad preparation or make good yarn from defective roving caused by a poor quality of raw material or by improper processing. Bad spinning can ruin good roving and nullify all of the good work in the preparatory departments.

In checking on the spinning operation, there are a number of points to be considered. These points, as we are listing them, are not necessarily in the order of their proper sequence or importance. The reader may arrange them to suit his convenience.

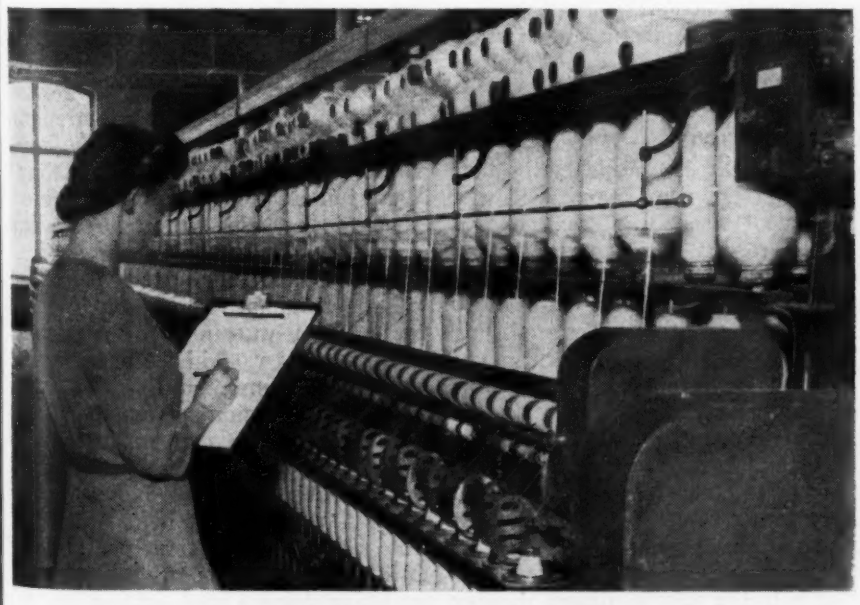
COTTON AND PREPARATION. The kind of products being made will naturally determine, to a large extent, the grade and staple of cotton to be used. Careful checking by a competent cotton classer of all cotton received by the mill—and, if possible, a check by the laboratory of the fiber strength and length—together with proper mixing and blending of the stock are safeguards that the spinning department has a right to expect.

In recent years, many mills have made studies of the operations in the opening room which have revealed the need for rearrangement of the machinery and the overhauling and resetting of beaters and grid bars for more effective opening, cleaning, and blending. In the picker room, daily lap-meter tests should be made to check the yard-for-yard evenness of the picker laps.

It is not within the scope of this article to cover in detail all of the items in the card room which should be checked in an effort to furnish the spinning room with even roving. A partial list of points which should be watched is as follows: condition or appearance of the web on the card; sliver weight and evenness; waste taken out at the card; draw-sliver evenness and weight; tension of web; roll settings on drawing and roving frames; evenness, weight, tension, and twist of roving; and so on. Although this may be done by the regular personnel of the card room, it is better, if possible, to have periodical tests made by the laboratory of the mill and have the reports on all machines making sub-standard work sent to the card room. In this way, the regular personnel can concentrate effort on those machines which need attention before they produce too much bad work.

As will be noted, the lining and leveling of the spinning frames is included in overhauling, which we believe is the general practice. It may seem superfluous to discuss this feature of overhauling, but we feel that a little more attention to the details of lining and leveling frames will pay dividends. A modern spinning frame may be as much as 45 to 50 ft. long. The three or four steel rolls on each side are driven by gearing at one end and run against pressure along their entire lengths because the top rolls are held firmly against the steel rolls by means of weights. Any settling of the floor will naturally throw a machine of this length out of line. This condition is usually worse in a new mill, but occasionally there may be some trouble of this nature in an old plant.

At the time this is being written, the question of cost has been pushed into the background; and every effort is being made to rush production for the war effort, regardless of expense. There will come a time (possibly sooner than some expect) when this condition will be reversed. Competition will force mills to watch cost,



Laboratory technician making an ends-down test in the spinning room.

quality, and waste, as well as production. When times change, those mills which keep their machinery in tip-top condition will find themselves in a more favorable position than those mills which have neglected these things just because help is short or repair parts are hard to get.

TRAVELERS. If the superintendent starts to check into the kind of travelers being used in his spinning room, he may run into all sorts of complications. Most present-day travelers are good from the standpoint of quality and workmanship, so he may find more than one brand of traveler being run. Because of the difference in the ring diameters or the age of the rings, he may find more than one size of traveler being run on the same number of yarn. He may find various types of travelers being tried out for experimental purposes. The things which we have just mentioned may not cause any bad work in the spinning, but there is one thing that will cause bad work—and that is to allow the travelers to be run too long before changing. Naturally, running conditions will determine the "life" of a traveler. It would be difficult, therefore, to give a safe rule that will be applicable to every case, but, by using 10s yarn as a basis, we find the following gives good results: yarn—10s; staple—1-in.; spindle speed—7,850 r.p.m.; diameter of rings—2½ in.; length traverse—9 in.; front roll speed—168 r.p.m.; traveler number—13; life of traveler—72 hr.

It is true, of course, that some travelers will have already worn out and broken off before changing time, and others will be found in good condition; but we find that by changing all the travelers at the end of this period, we get very good results.

ROLL COVERING. We will not attempt to say which kind of roll covering is best. Down in his heart, each spinner may have his own ideas as to which type is best for his own particular job; but we doubt if any mill has yet run sufficient tests on all of the commercially available roll coverings to determine beyond question the one best type. Our mill has made many tests of this kind, and, only recently, we ran a ten-day test for breaking strength on two types of covering. The results were practically identical, but so many factors enter into the question of breaking strength and the time of the test was so short that we were not really sure that we found out anything. (Had there been a radical difference in the results, we would, of course, have continued the test for a longer period.)

_____ **MILL**

Report of Ends Down on Spinning Frames

Frame No. _____ Make _____ Gage _____ Dia. Ring _____ Traverse _____ No. of Spindles _____

Yarn No. _____ Hank Roving _____ Stock _____ Twist Const. _____ Roll Covering _____

Long-Draft Apron _____ Make and No. of Trav. _____

Rolls Picked _____ Trav. Changed _____ Frame Doffed _____

Date _____ Time Test Began _____ Time Test Comp. _____

Reasons for ends down — Hour:	Number of Ends Down									E.D.P.T.H.*
	1	2	3	4	5	6	7	8	Total	
Bad roller —										
Bad apron —										
Traveler off —										
Traveler worn —										
Singling —										
Doubling —										
Weak roving —										
Gouty roving —										
Tangled roving —										
Roving trumpet stopped up —										
Roving trumpet loose —										
Spindle not plumb —										
Guide not properly set —										
Cleaning —										
Doffing —										
Roving run out —										
Knocked down by adj. end —										
Tape or band off —										
Unknown —										
Additional known reasons —										
Totals.....										

*Ends-Down-per-Thousand-Spindle-Hours Formula: $E.D.P.T.H. = \frac{\text{Ends down X 1000}}{\text{Spindles per frame X Hours of test}}$

Remarks _____

Signed _____

This form is being used for ends-down tests in one large mill.

The only suggestions which we are making in this connection are that the rolls should have proper attention as to buffing or recovering, and that tests should be continued in an effort to learn more about this important factor in the spinning process.

DRAFT AND TWIST. It seems so elementary to discuss the subject of draft and twist in connection with the making of even yarn that one is tempted to pass it up—but the quality of the yarn is so vitally affected by these operations and they have so much bearing on the cost of producing the yarn that an entire article might profitably be devoted to these factors alone.

Most of our spinning is on long draft, but we do have a few conventional-draft frames (usually on special fancy yarns), which occasionally must be run on staple numbers. In an effort to lower cost, we have reduced our rovings to the very minimum number of sizes. This is made possible by the installation of long-draft frames. When it became necessary to put these special frames on the regular run, we had no roving available except that for the long-draft frames; so we simply creeled it in and changed the draft gears accordingly. Fortunately, we made breaking-strength tests on these frames separately from those for similar yarns on the long-draft frames, for we soon discovered that the breaking strength of yarn from the conventional frames was lower than that of the yarn produced on the long-draft frames and that if we used this yarn in the same fabrics, special roving would have to be made.

It is, of course, possible to spin a wider range of numbers on long-draft frames; but in making yarn for fabrics with high breaking-strength requirements, this must not be overdone. Tests should be made before spinning too many numbers from one roving. Without attempting to go on record as laying down a hard-and-fast rule to use in such cases, we are suggesting

the following range as being practical: Length of staple—1 in.; hank roving—1.00; type of long draft—Whitin, Saco-Lowell, H & B; range of yarn numbers—5s to 16s.

A number of factors enter into the determination of the number of turns of twist to be put in yarn, the most important of which are the length of staple and the purpose for which the yarn is to be used. From the standpoint of cost, the twist should be as low as is practical. The lower the twist, the higher the front-roll speed, and the greater the production.

Laboratory tests should be made until the correct twist has been determined. We suggest starting with the twist a little on the high side; for if the twist is so low that the breaking strength is seriously affected, too much yarn may get into regular production and cause trouble before the matter can be corrected. By starting with a high twist, the twist multiplier may be gradually lowered, as experiments are made, until a safe margin is reached on the low side. All this can be done without any adverse effect on the resultant yarn or cloth.

ATMOSPHERIC CONDITIONS. In this article it is assumed, of course, that the spinning is entirely on cotton. Repeated tests have shown conclusively that as the moisture content of the cotton yarn or cloth increases, there is a definite increase in breaking strength; yet it must be remembered that there is a limit beyond which the proper drafting of the fibers is impaired. In this connection, we are simply suggesting that once the ideal conditions for spinning room have been established, every effort be made to maintain those conditions within reasonable tolerances. Of course, air-conditioning is best, and next would come air-changing. However, if the mill has nothing but regular humidifiers, fairly constant conditions can be maintained, except during extremes of outside conditions, if these suggestions are followed:

1. Daily cleaning of humidifier heads.
2. Proper attention to water and air supply. See that water is kept free from trash which will stop up the atomizers.
3. Have a sufficient number of automatic regulators; that is, have only a few heads on each regulator, so that varying conditions throughout the room can be corrected.
4. Read regulators at relatively short periods, say every 1 or 2 hours, and then bring these reports to the attention of some responsible person, possibly the overseer or second-hand who has authority to regulate any unfavorable condition.

Many mills have tried out the plan of having their spinners responsible only for getting-up ends and setting-in roving and of having the cleaning done by less-experienced help, called cleaners. From a cost standpoint, this seems to be logical; but because of the narrowing of the margin of difference in pay between the skilled spinner and the less-experienced learner, and the fact that the spinner can cover only so much territory successfully, some mills are finding that the spinner cannot tend enough extra sides to offset the cost of the cleaner; so the plan is being abandoned.

We regret to make this report, for we think the plan has much to commend it. We are thinking especially of the spinner having to pick rolls, during which operation she will get her fingers stained; and naturally she is going to have to get up some ends before she has time to wash her hands, thus she stains the yarn. Also picking rolls is a job that consumes a considerable amount of time; and when a spinner once starts, she dislikes stopping to patrol her sides; yet, that is just what she must do to keep from getting behind. The other cleaning jobs that a spinner has to do require only a relatively small amount of time. Additional studies of the spinning and cleaning operations might be made and something worked out to the advantage of both the spinners and the mill.

Alignment of frames and spindles influences yarn quality and production. (Overhauler is holding a paper shim in his mouth—not a cigarette.)

We do not know any way to prevent lint from settling on everything in the spinning room. Overhead traveling cleaners help keep some of the lint off the frames; but it accumulates on the sprinkler pipes, the humidifiers, air conduits, light fixtures, and the ceiling. We know of only two practical methods of removing this lint, one is to brush it down and the other is to blow it down with compressed air. Some of this lint is going to get in the yarn as it is being blown or brushed down. Some mills have decided that it is better to blow down every day, when there will be only a relatively small amount of fly, rather than to clean down weekly after a large amount of lint has accumulated. The reader will have to make his own decision; it is bad either way, but we are inclined to favor the daily plan.

TESTING AND CHECKING. As a means of effectively controlling quality, production, and to a certain extent cost, a regular program of control checking should be inaugurated, if one is not already in operation. If the mill has a laboratory to handle this, so much the better; but if not, some responsible individual should be put in charge of this testing and should be given all the facilities possible in order to do an effective job. The following equipment is necessary for even a moderate program of testing:

1. A small room that can be properly air conditioned.
2. A yarn reel.
3. Conditioning rack.
4. A vertical tester (for breaking strength).
5. Yarn scales or balances.
6. A twist tester.
7. Forms for making reports.
8. Bags or baskets for handling bobbins of yarn.
9. A speed indicator.
10. A clip board for use in checking ends down.
11. A list of standards to be used in evaluating reports.

The checking of yarn size and breaking strength is a routine matter with practically all mills, and so we will not take up space in describing these operations; however, we would caution that this work be done with care and under proper atmospheric

(Continued on page 192)

Short-Cuts in DESIGNING Granite and Crepe Weaves

HIGHLIGHTS: Large variety of granite weaves can be derived by simple transposition of basket weaves. Crepe weaves of large repeats easily made by the superimposing of plain weave on a base design.

By GEORGE WAKEFIELD

PRESENT WARTIME DIRECTIVES have channeled most of the worsted yarns into military fabrics. As a result, woolens and tweeds have increased in popularity with the consuming public. Great Britain has always led in the design of tweeds, accordingly, it may be wise to inspect some of the methods used in designing novelty tweeds. Also, some of the designs and methods covered may be employed in the creation of worsted fabrics for the women's-wear trade.

As a basis for novel fabrics, weaves of the "granite" or "crepe" type are excellent; but they must be chosen very carefully. A common feature of crepe weaves is that floats of widely differing lengths are utilized in such a manner that twilliness or other prominent effects are absent. The granite weaves may be considered as a species of stitched basket constructions; but, compared with the true basket weaves, the granites are firmer and less clearly defined.

VARIATIONS OF GRANITE AND CREPE WEAVES. A manner of constructing granite weaves is to remove marks from the warp section of a basket design and insert corresponding marks in the filling section. For instance, weave *A*, Fig. 1, is a 4-and-4 basket weave, and *B* is a granite weave derived from it. When piece-dyed, many of the granite weaves yield pleasing results; but, when woven with contrasting colors in the warp and filling, a much greater variety of fabrics are possible.

A triangular granite weave, warped white and woven with black filling gives a very good pleasing appearance. This weave is shown at *C*. For more delicate weave effects, that shown in *D* is useful. It shows a faint sign of twilliness, being well-broken with a suspicion of a cross twill.

Weave *E* is another granite based on the 4-and-4 basket. In this case the floats cause a distortion of the basket, or mat sections, tending to produce a diamond formation. A weave similar to this, but based on a 6-and-6 basket, is weave *F*. And when woven with contrasting shades such as putty-colored warp and a dark-brown filling, it gives a novel fabric. By using warping and filling patterns, marked changes are brought about.

Granite weave *G*, based on the 3-and-3 basket weave, is warped 3 light, 3 dark, 3 light, 3 medium. If a bright color is introduced for every sixth thread of dark the whole pattern is enriched.

Weave *H*, Fig. 1, is a crepe weave based on a 5-end sateen. It is very effective when patterned as follows:

WARP—2 fawn, 2 dark brown, 2 green/white, 2 dark brown, 2 dark brown/white, 2 dark brown.

FILLING—2 fawn, 2 navy, 2 royal

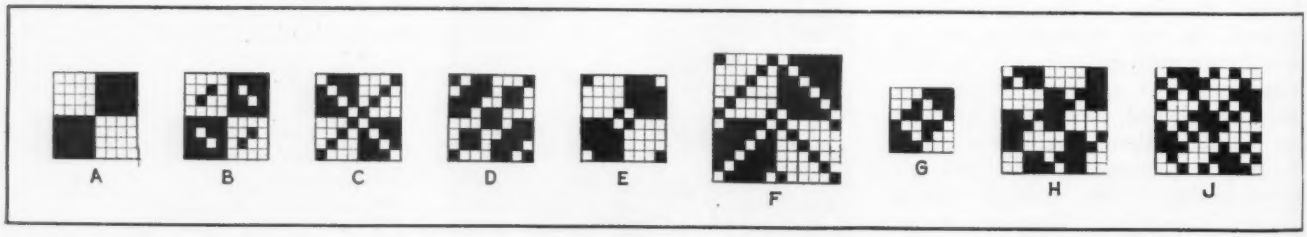


Fig. 1. Granite weaves derived from basket weaves by a simple transposition of warp and filling risers.

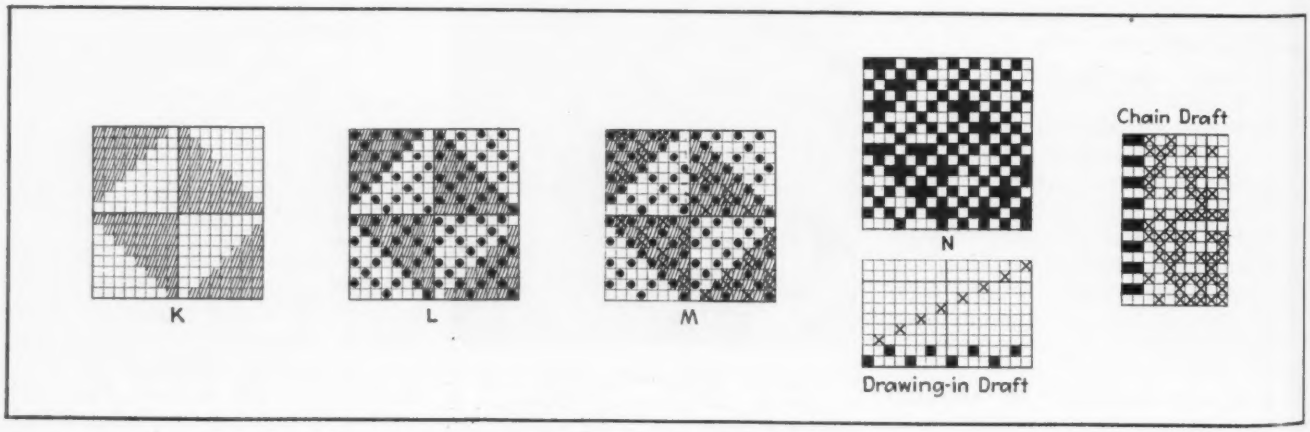


Fig. 2. Crepe weave patterns easily made by superimposing plain weave on base design.

blue/white, 2 navy, 2 black/white, 2 navy.

With various warping and filling patterns, crepe and granite weaves can give very pleasing designs. As an illustration of this, consider weave *J*. When warped and filled 2 dark and 2 light, a very pleasing ground results. This weave ought to be set fairly firm to give the best texture.

As a variant, a check can be produced on the 2-and-2 ground by changing it to 3 dark and 3 light for 24 threads, 4 dark and 4 light for 24 threads, and again 3 dark and 3 light for 24 threads.

For weaves of the types demonstrated in this article, most novel effects are often obtained by moving the warping and/or filling pattern backward or forward. Sometimes a movement of only one pick or end produces the most amazing change in the color effect.

PRODUCING LARGE CREPE PATTERNS. Sometimes it is desired to have larger crepe patterns or even figured crepe effects on shaft looms. By combining a plain weave with floating threads of not greater than three ends, a designer can obtain a firm cloth without high settings, and, at the same time produce figured effects of such large repeats that without drafting they would have to be woven on jacquard looms. The writer has two methods of producing these figured effects, although they both yield the same type of construction, viz. every alternate end works plain weave, and the picks have half of their interlacings plain.

A method suitable for the smaller figures is as follows:

1. Paint-in or shade-in the figure, as shown in *K*, Fig. 2.

2. Cover the point paper with dots, as shown in *L;* odd ends are dotted plain, even ends are dotted $\frac{1}{3}$.

3. Where the figure is shaded add the crosses in a regular order, as shown in *M*.

4. The final design is shown in *N*, which will give the figured crepe.

The weave *N* would draft onto nine harnesses because all the odd picks are alike. But in practice, it is better not to load one shaft with all the odd ends, rather utilize two shafts, as shown in the accompanying drawing-in draft. The peg or chain draft is on ten shafts. The number of shafts necessary is half of the ends in one repeat of the design, plus two for the plain ends. It may happen, of course, that some of the shafts from number three upwards are duplicated, in which case further drafting would be possible.

Another method has been developed which is suitable for larger figures and eliminates much of the tedious process of filling-in the painted figure, the inserting of the dots and crosses, the extracting of the draft end-by-end, and the building of the peg plan. In this method the design is placed on paper in the form of the peg or chain draft, the draft being always similar, viz. first two harnesses for the odd ends, and the rest for the even ends. Such a draft is shown in Fig. 3.

This chain draft for the design in Fig. 3 is built as follows:

1. Fill-in the first two vertical columns with plain weave.

2. Paint-in or shade-in only the even ends of the design.

3. Commencing with the first pick of the chain draft raise all the odd picks *where the design* occurs, as shown by the dots.

4. Commencing with picks one and two, take the picks of the chain draft in pairs and insert plain weave, as shown by the crosses. Always start with the first pick of each pair, and begin putting in the crosses where the draft is *not* shaded-in. As soon as the shaded part is reached, continue putting the crosses in plain weave order, but hop up to the second pick of the pair. Then, as soon as the shaded part ends, hop down again to the first pick of the pair.

Other novelty designs may be produced in this type of fabric by the introduction of thick-and-thin yarns. The thin yarn in the warp is usually worked on the plain-weave harnesses, and the thick yarn on the floating or even threads. One scheme is to warp 1 black (thin) and 1 white (thick), the black being single yarn, 2.4 run, and the white being 2-ply yarn of the same count. Arrange the order of interlacing so that black filling covers the black warp to give a hairline.

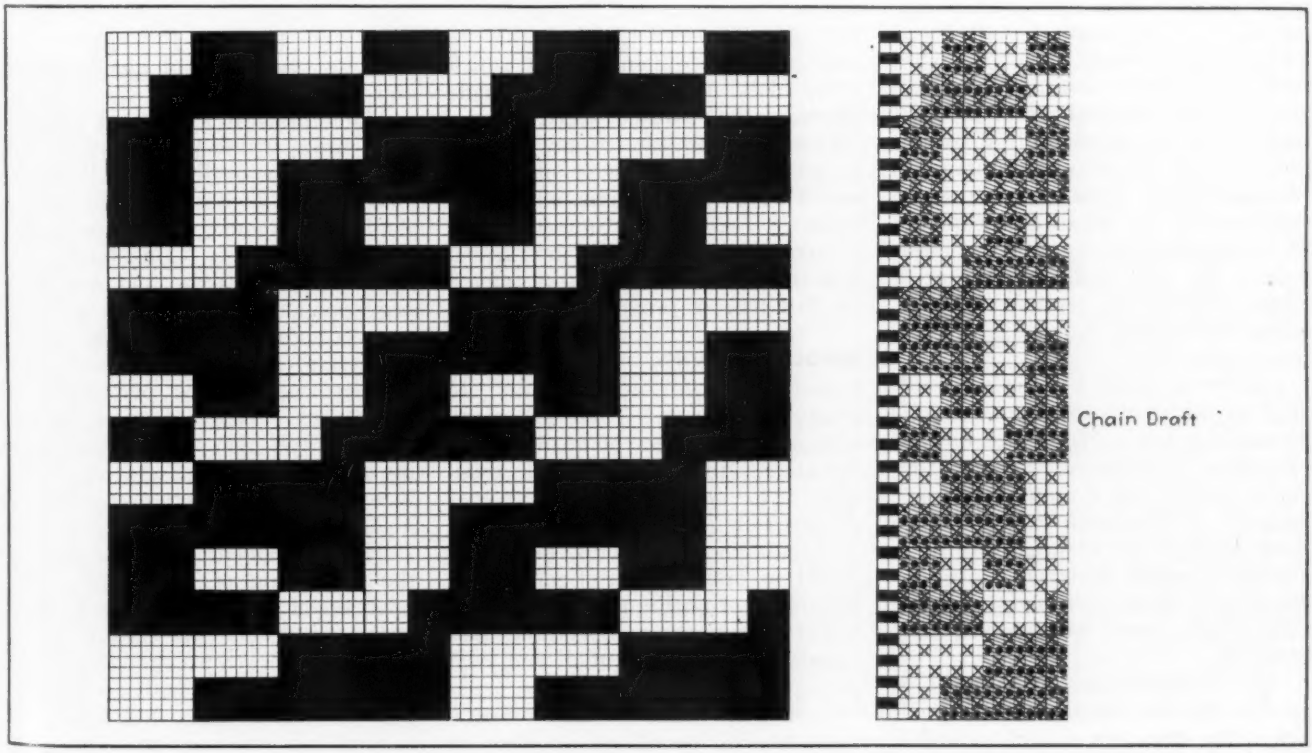
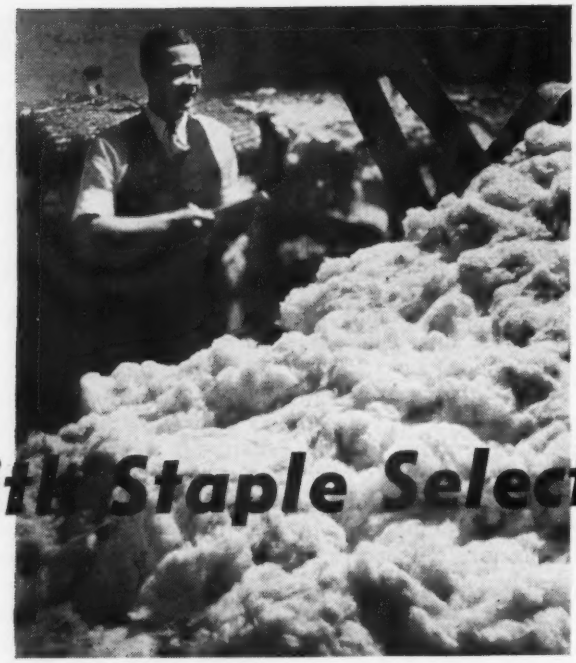


Fig. 3. Method of developing chain draft from the design.

CARD-ROOM CONTROL Begins With Staple Selection



By H. E. HELLIWELL

HIGHLIGHTS: Great variation exists in quality of cotton needed. Carder should work with classer. Staple length does not indicate running quality. No established standards of character.

QUALITY, PRODUCTION, COST, personnel, and maintenance are all factors which are closely inter-related to each other when considering card-room control. The attainment of good quality often means a partial sacrifice of production. Reduced production inevitably results in higher unit costs. Well trained, cooperative personnel are essential for the required quality, for fair production at reasonable cost, and for efficient maintenance of equipment. Proper maintenance will preserve or improve the quality of production, increase the amount, reduce the cost, help to develop a high morale, and promote contentment and regular attendance of operating personnel.

Quality of product is the real yardstick by which department success is measured. Any machine, regardless of condition, adjustment, or operating speed will deliver a product of some nature. If this product can not be made to meet the required quality, it would be much better to leave the machine stopped or convert to some other kind of work with lower quality standards.

The determination of the degree of quality required for a particular product is the first step toward profitable department and plant operation. A fine sewing thread would require a careful selection of the best cotton available—regardless of cost, careful control, inspection, exact adjustments, and low productions for good quality throughout all the processes. The price received for the product would justify the high raw material and operating costs and with good management should return a neat profit.

The manufacturer of mop yarn could use the rejected wastes of other mills, eliminate many of the conventional processes, increase speeds and productions to the full capacity limits of each machine, and yet deliver a yarn of sufficiently good quality to meet all the requirements for which it would be used. Any higher grade of stock, any reduced speed or production of machines, or any attempt to attain a higher degree of quality would be a waste of time, effort, and money. The manufacturer would be compelled to follow this plan of operation to meet the market price offered for this type of product.

MIDDLE GROUND. These two extremes of quality requirements are cited for contrast. There are many intermediate degrees of quality to fit the nature and use of the various products. The lowest required degree of quality should not be considered as an excuse for carelessness, indifferent operation, or for neglect of equipment. Regardless of quality requirements, efficient organization, operation, and maintenance are essential and will prove good economy.

Card-room processes are comparatively low-cost operations, yet they are the foundation for all subsequent processes. The best spinning and weaving in existence will not remove or entirely correct the faults and failures of the carding processes. A few more cents spent on carding will often save many dollars in spinning and weaving.

There is a quality factor of manufacturing which is only slightly secondary in importance to the quality of the finished product. This may truly be called the quality of economy. The quality of the stock used and the quality of the treatment given in the preliminary processes permit operating speeds and job assignments in spinning and weaving that prove the economy and profit of quality staple and quality carding.

Many medical gauze and tobacco cloth mills, whose products does not demand high quality, find it profitable to use a higher-grade and longer-staple cotton and greater care in the carding processes. Consistently low spinning-end breakage and low stoppage per loom hour permit a larger number of frames and looms to be assigned to each operative, with actually less work to be performed by each hand. This reduction, in the comparatively high spinning and weaving costs more than offsets the slightly increased cost of better cotton and higher card-room labor costs.

The most essential requirements in the production of good yarn is the selection of cotton with the required characteristics for the class of goods manufactured. Since good spinning and weaving can do little to improve poor carding, it is also true that good carding can only preserve the good qualities of the cotton processed. It

may remove some of the impurities and short fibers, but it can neither improve the character nor increase the staple length.

It is axiomatic that the achievement of quality in the finished product starts in the classing room. In the smaller mills, the boss carder usually does his own classing and is in a position to know more about the selection of cotton with the proper grade, character, and length of staple for the specific goods required than the carder when classing is a separate department.

CARDER CAN HELP. The carder who really knows his cotton has an excellent opportunity to save many dollars for his company. It will prove profitable, even in the larger mills, to have the carder in close touch with the classing department, if only in an advisory capacity. His advice and knowledge of results obtained in processing previous lots of similar cotton will prove valuable to the classer in the selection and acceptance of shipments.

There are many factors involved governing the proper selection of cotton for various specific purposes. The three main factors are the character and quality of the finished goods, the economy of manufacture, and the price per pound of the cotton. The price per pound will closely determine the grade, character, and length of staple. These fiber characteristics will affect the amount of waste removed, the operating speeds, the strength, and the appearance of the finished goods. Long experience and the knowledge of previous results obtained from similar stock are two essential qualifications for the efficient, economical selection of suitable cotton.

A grade better or a staple longer than that required to give satisfactory operating or quality results would be a waste of money. Conversely a grade lower or staple shorter might prove poor economy in manufacture and cause finished goods to fail to meet the required specifications as to strength and appearance.

There are certain recognized ranges of counts for staple lengths as shown in Table I. The length of staple selected should be suitable for the numbers to be spun. Cotton of 1-in. staple length is suitable for 20s to 30s warp yarn. Good spinning, weaving, or yarn strength could not be expected from 60s warp yarn made from 1-in. cotton. This relation between staple length and yarn strength should be the first point considered in the selection of cotton for any specified yarn number. For relationship of

(*Continued on page 194*)

TABLE I. Yarn Counts and Staple Lengths.

Staple (inches)	Carded Yarn		Combed Yarn	
	Warp	Filling	Warp	Filling
1/2 to 5/8	Up to 10s	Up to 10s		
5/8 to 3/4	10s to 14s	10s to 20s		
3/4 to 7/8	14s to 20s	20s to 30s		
7/8 to 1	20s to 30s	30s to 36s		
1 to 1 1/8	30s to 36s	36s to 45s	Up to 30s	Up to 40s
1 1/8 to 1 1/4	36s to 50s	45s to 60s	30s to 60s	40s to 70s
1 1/4 to 1 3/8	50s to 70s	60s to 80s	60s to 70s	70s to 100s

The cotton in the lap largely determines the results of carding which follow.

TABLE II. Sheldon Table of Strength of Carded Cotton Warp Yarn (in Pounds) (Skein Tests)

Counts	1 3/8 in.	1 1/4 in.	1 1/8 in.	1 in.	7/8 in.
10	.....	254	218.5	186.5	150.5
12	248	210	181.5	153.5	125
14	205	178	154	130	106
16	176.5	155	133	111.5	90
18	156	137	116.5	97.5	78
20	140.5	122.5	103.5	85.5	68
22	123.5	109	92	76	59.5
24	111.5	98.5	83	69	53
26	102	89	76	62.5	47.5
28	93	81.5	70	57.5	43.5
30	86	75	64.5	52.5	40

BEARINGS— Keep 'em Running

HIGHLIGHTS: Motor maintenance requires different checking for various types of bearings. Waste-packed bearings used on loom motors indicate bearing failure when waste begins to carbonize.

By **CHARLES G. PRICE,** *Odell Mill Supply Co.*

IN ANY TEXTILE MILL equipped with a large number of electric motors of different makes and types, bearing trouble is apt to be of frequent occurrence. Especially when the motors used in most textile plants are generally equipped with one of three different types of bearings, oiling difficulties soon lead to bearing trouble.

Unfortunately, there is no magic formula to be given the chief engineer which can be called a "fool-proof" oiling system for such a variety of electric motors.

The frequency of inspection, including the addition of oil, changing of oil, and bearing wear, is best determined by careful studies of the particular operating conditions for each motor. From this careful study, an inspection and maintenance schedule can be worked up in order to secure maximum life for the motors and bearings and a minimum maintenance schedule to accomplish it satisfactorily.

SLEEVE BEARINGS. The old types of sleeve bearings are not so efficiently designed and built as the newer types, and they require more frequent inspection and checking for wear. Oil changes should be made more often.

The newer type of sealed-sleeve bearings require very little maintenance since modern seals keep the oil in and the dirt out. There is less leakage and less oil contamination. In most cases, all that is needed for maintenance of these newer-type sealed-sleeve bearings is to maintain the oil level at its correct height. Care should be taken that the motor is not oiled while it is running, as this tends to give a false indication of having reached the proper oil level. Actually the bearing would be over-oiled.

Over-oiling is disastrous, as a pumping action in the bearing results in leakage into the winding of the motor, and this oil rapidly deteriorates the insulation of the winding, causing it to fail. The construction of the modern bearing is such that the felt seals are for the purpose of keeping air out of the bearings and preventing this pumping action. Very little difficulty will be encountered with modern sealed-sleeve bearings. A simple maintenance schedule can be set up for periodic checking of oil and bearing condition.

On small sleeve-bearing motors, there is no simple way to check bearing wear. However, on the larger and more important motors, the air gaps should be checked periodically on the motor record card or sheet. Thus, any bearing wear will immediately show up in the dropping of the rotor; and the bearing can be replaced or rebabbitted before the rotor drops low enough to rub the stator and burn out the motor.

ANTI-FRICTION BEARINGS. In the case of anti-friction bearings, more trouble is probably caused by over-greasing than by under-greasing. Unless the bearing housing is so con-

Pointers on Correct LUBRICATION

Old grease is forced through relief plug while motor is running.

HOW TO DO IT. Sleeve bearings should be oiled only when the motor is stopped. If an oil-filler gage is provided, oil level should be kept at the three-quarters level.

Most sleeve bearings have a drain plug located at the side or on the bottom of the bearing. Dirty oil should be drained and flushed with clean oil. Flushing should continue until the oil draining from the bearing runs clear.

Many fractional horsepower motors do not have provisions for checking oil level, as they are generally waste packed. Such bearings may be oiled by adding from 30 to 70 drops of oil to the bearing at the end of the first year of service. Re-oiling then takes place at the end of each 1,000-hr. period.

structed as to have an overflow sump, tremendous pressure can be built up within the bearing housing when greasing, and this pressure will materially shorten the life of the bearing.

It has also been found that air is one of the main elements which deteriorates grease in ball bearings. The more air that gets to the bearing, the shorter the bearing life. The writer actually knows of one mill using thousands of motors in which the bearings were carefully greased when the motors were installed, and then all greasing facilities were removed. Pipe plugs were used to seal the bearings in the housings and they were let run until the bearings fail. It is amazing what great length of life has been obtained from bearings in this type of service. This procedure is not recommended, but it does show what can happen when the dirt and air are kept out and the grease kept in the bearings.

Another difficulty encountered in maintenance of anti-friction bearings comes from the use of contaminated grease. In far too many mills, it is found that the grease is kept in large cans on which the lid is invariably left open and dirt, grit, and metal filings get into this grease. Then, when this grease is used to pack ball bearings, it causes bearing failure in a very short time. Every precaution should be taken to keep cans of grease from becoming fouled or contaminated.

WASTE-PACKED BEARINGS. A third type of bearing in common use in textile mills is the waste-packed bearing, usually used on loom motors.

Whenever a motor is torn down, check bearing wear with instruments designed for the job. This motor shows less than 0.0015-in. wear after eleven years of service.

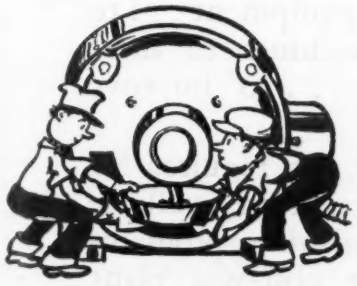
This type of bearing is necessary because the very severe service received by bearings on loom motors will hammer-out an anti-friction type of bearing in a very short time. Sleeve bearings also are not satisfactory because the vibration keeps the ring from properly functioning in bearing oil. For this reason, waste-packed bearings (packed with wool waste) are used; the waste is kept saturated with oil.

Very little difficulty has been experienced with this type of bearing as long as the waste is kept saturated with oil. With this type of bearing, most infrequent oiling is necessary. The wool waste holds the oil for long periods of time, and it is only necessary to "spot check" these motors occasionally. By "spot check" is meant that a few motors should be selected at random and the rotors removed. The inner surface of the waste should be examined to be sure that it is not carbonized. First signs of a failure is the carbonizing of the wool waste on the bearing surface side, caused from heat generated due to insufficient oil. Carbonization of the waste hardens the surface, prevents penetration of oil, and causes the bearing to fail.

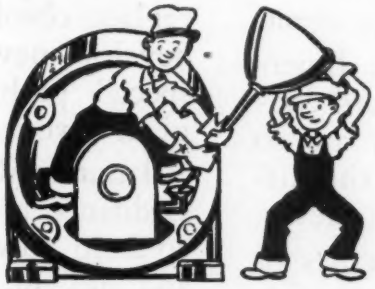
LINT-FREE MOTORS. The lint-free, textile-type motor at the time they are shipped are supplied with instructions for maintenance of the bearings, advising that the grease provided in the bearing will insure adequate lubrication for at least three years. No grease need be added within that time. This bearing not only has an inspection plug but also a piston-ring seal. At the end of three years, a "spot check" should be made of several of the motors by removing the outer piston-ring seal, a very simple operation.

If the grease is discolored or has a bad odor, the bearings should be thoroughly cleaned and re-packed with a special grease which is put up in "tooth-paste-type" tubes to prevent possible contamination. If there is no indication of discoloration or bad odor, it is recommended that the shield be replaced and the bearing put back in service for several more years.

Only recently the author checked with several textile mills in which the motors had been in operation for over six years with no more trouble than the "spot checks" at the end of three years and again at the end of six years. It is yet to be seen just how long these bearings will operate without service.



Dirty oil is flushed from the bearing before refilling with clean oil.

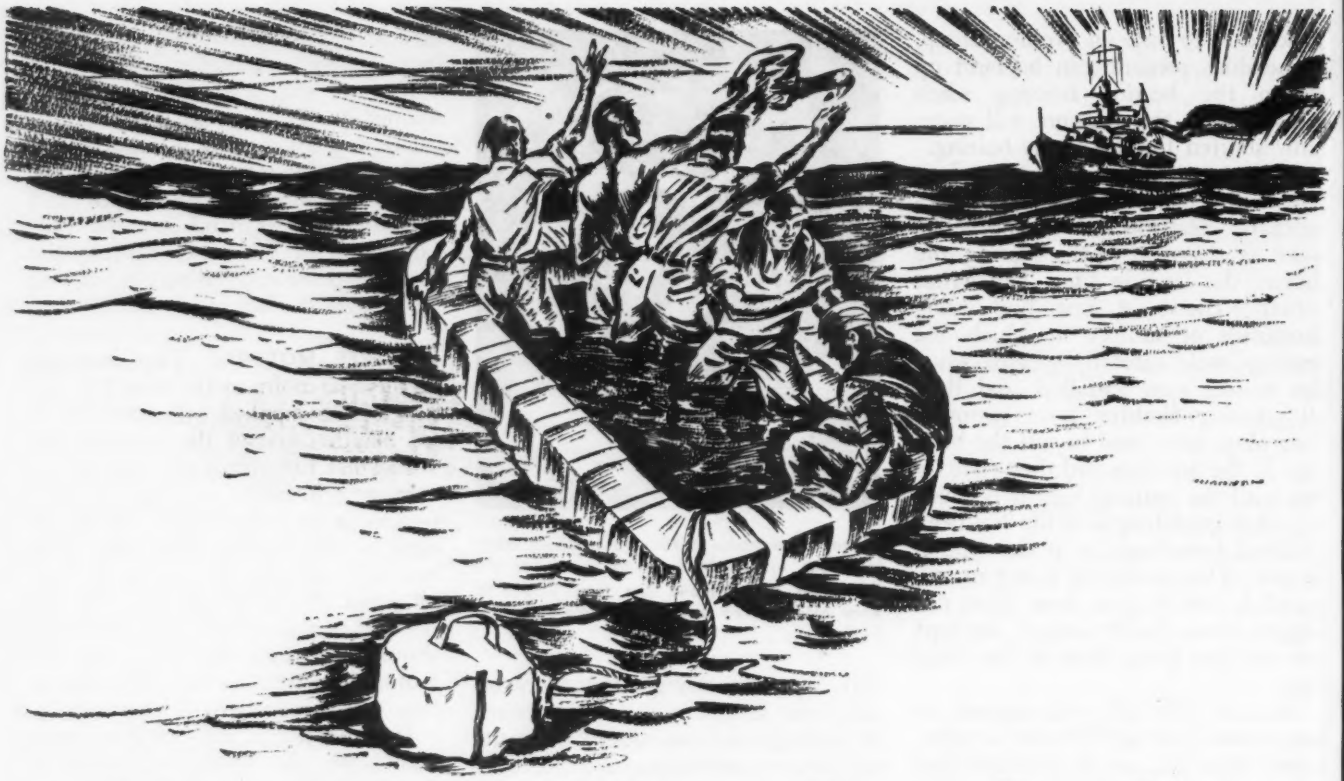


Fractional horsepower motors require 30 to 70 drops of oil for first year.

Ball-bearing motors are of two types; one being equipped with a pressure-relief system, and the other has no provision for the relief of pressure created during greasing. Motors with relief systems, when lubricated, have the relief plug removed from the bottom of the bearing prior to using the grease gun. This allows the new grease to force from the bearing the old grease, which amounts to a flushing operation. The motor is operated while the new grease is being added and is allowed to run long enough to force all excess grease from the housing before the relief plug is replaced.

Motors equipped with ball bearings but without a relief plug will operate for a year without the addition of grease. After this period of time the bearing case must be removed and the bearing repacked. The bearings are cleaned with a solvent and dried. Apply the new grease over and around the balls and fill the housing from one-third to one-half full of grease. Assemble the motor.

Greasing of motors equipped with roller bearings is similar to the operation of handling ball bearings.



Equipment for Survival— in a Cotton Bag

Sailors forced to take to life rafts are equipped with all the basic survival devices, enclosed in an Emergency Equipment Container.

This compact zipper bag is made of cotton twill thoroughly coated with Vinylite plastic. No sewing is used; a Vinylite cement acts as an adhesive and waterproofing agent.

Lashed to a life raft, these Emergency Equipment Bags guard contents until the time they are so desperately needed; mean the difference between life and death.

There's no danger of matches or flares getting wet; pistols or fish hooks getting rusted... Emergency Equipment Bags resist water, sun, mildew, and wear.

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Butterworth

Preparation Differs for MONOFILAMENT YARNS

HIGHLIGHTS: Double creel speeds horizontal warping. V-creel, back of slasher, saves operation, although yarn is not sized. Direct weaving similar to tire cord is possible. Handling of nylon differs from other heavier plastics. Piece bobbins are quilled, not knotted.

By ALBERT FRANTZ

THE PREPARATION of monofilament yarns for the loom differs considerably from cotton, rayon, and other yarns. In some instances, especially on the heavier gages of "wire" monofilaments, specially designed machinery must be used if satisfactory production is to be attained in the weave shed. Much of this equipment can be designed and made from items available to the plant; and, frequently, ideas can be tried which will vastly improve production all along the line.

Usually, the average weaving plant, busy on items less trying than monofilament weaves, will shun the heavier yarns if a trial proves production of cloth to be difficult. These plants fail to use creative possibilities often lying passive among many capable employees, due to lack of an incentive program, and give up before a fair trial has been made. But, thanks to the pioneering progressiveness of some plants, trouble and difficulties have been ironed out, and a new product has been launched. The various monofilament weaves hold tremendous possibilities in the post-war era looming ahead.

When monofilament fabrics became big-yardage numbers for government needs, only a few pilot plants had the ability to turn them out. And suddenly, trade papers, magazines, and news items informed the civilian of a new "wire" plastic screening that would make obsolete metal screens and other woven or meshed metal materials. The public may be slightly skeptical about a cloth taking the place of screening, but the writer firmly believes that the future looks promising for weaving plants running monofilaments. For screening alone, production of millions of yards yearly lies ahead. And as most weaving plants have a diversified line, surely the monofilament material will be included in their products. Does this seem farfetched or doubtful? Place yourself in a housekeeper's shoes for a moment —would you rather call in a carpenter to place in new metal screening, or would you rather place in a monofilament cloth screening that is easily handled and tacked on in a few minutes time by yourself? And best of all, the new cloth screening could be washed without trouble, and no rust would eat the edges away, let in flies, etc. The answer to this question is obvious.

But this is not a sales article on monofilament yarns and weaves. The writer's intentions are to present a working knowledge of what has been accomplished in some plants in the way of preparing the yarn for the loom. This includes warping, harness entering, and bobbin winding. The ideas are practical and have been tested on certain yarns. Some of these ideas are so radical that they may prove to be the forerunners of new machinery in the weaving industry. And there is still need for many other improvements and new devices, since many of the present-day devices are not adequate to handle monofilament yarns.

NYLON LENO. First, we will take the finer gages of monofilament yarns. Included here is the nylon leno mesh of fine monofilaments. Yarn for this cannot be warped satisfactorily on the cone creel used for rayon and cotton warping, since, at high speeds, the yarn whips into a wide balloon and often strikes or locks around the reserve package. This trouble in itself eliminates the possibility of high warping production on high-speed warpers.

The next-best plan logically would be to make use of a bobbin creel. The usual capacity of such a rayon bobbin creel averages approximately 1,000 bobbins. These creels are still existant for running high-twist yarns from 30- to 75-turns per inch. The creels are also used (with a smaller number of

Spool of monofilament yarn on piece of monofilament upholstery fabric.

SUN LUBRICANT...

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A large textile mill in central Pennsylvania tried one make of grease after another on the gears and cams of its spinning-frames. But the lubricants continually dripped off, staining work and messing-up floors. Because of this loss, the machines occasionally ran dry, causing excessive wear.

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spindles) for tinsel, straw, and various other warp yarns.

But most packages of monofilament yarns weigh 1-lb. net, and the 1,000-pin creel would be out of the question due to spacing between spindles (pins). To build a new 1,000-pin creel would require entirely too much width for satisfactory warping. However, there is a method of warping from a 1,000 bank—by forming a double creel as shown in Fig. 1. As most warping foremen are familiar with bobbin creels, there is no need of going into elaborate diagrams showing the creel face and various construction features. The following text should be sufficient to make the details of this creel clear enough to follow.

If two old creels are available, they can be assembled into the double-creel required. If none is available, the creel can easily be built.

The front creel facing the warper should be of average height, built to take 480 of the 1-lb. bobbins. The back creel should be one or two rows higher and several rows longer, built to take 520 bobbins. Thus there will be 40 bobbins more on the back than on the front creel.

Figuring on yarn bands, the 1,000 bobbin double creel will now be capable of running a 1,000-end band. This number may be required for a 2,000-end, 3,000-end, or a 4,000-end warp. The creel can also be used for other yarns packaged on large bobbins or when cone creeling is not advisable.

One nylon construction of netting cloth requires a total of 1,728 warp ends plus selvages. If selvages are placed on separate selvage bobbins, they need not be figured in the creel count. If selvages are placed on the warp beam, they must be figured in the creel count. As this particular weave is a leno type with 2 ends per dent on a 24-dent reed, 48 ends per inch are required. Thus a 36-in. weave, plus selvages, will give a number of ends less than two 1,000-end banks from a double creel. So, in place of running one band of 1,000 ends and one band of 728 ends, the two bands are equalized to 864 ends each. This method makes warping easier to figure and speeds warping slightly, as time in dropping ends after the first bank and picking up ends after the second will have been eliminated.

LARGER PINS. Spindles (creel pins) placed in the new or rebuilt double creels are generally about ½-in. in diameter to take the larger bobbin. This avoids erratic spinning when the warper is running. In order to secure a suitable drag to retard over-riding when slowing or bringing the machine to a stop, felt washers or strips of felt are placed over the spindles previous to banking-in. Since velocity of the bobbins increases as warper speed is applied, bobbins have a tendency to rise slightly off the felt and tension is reduced. As warper speed is decreased near a cut-off or for other purposes, the bobbins sink back onto the felt and drag increases.

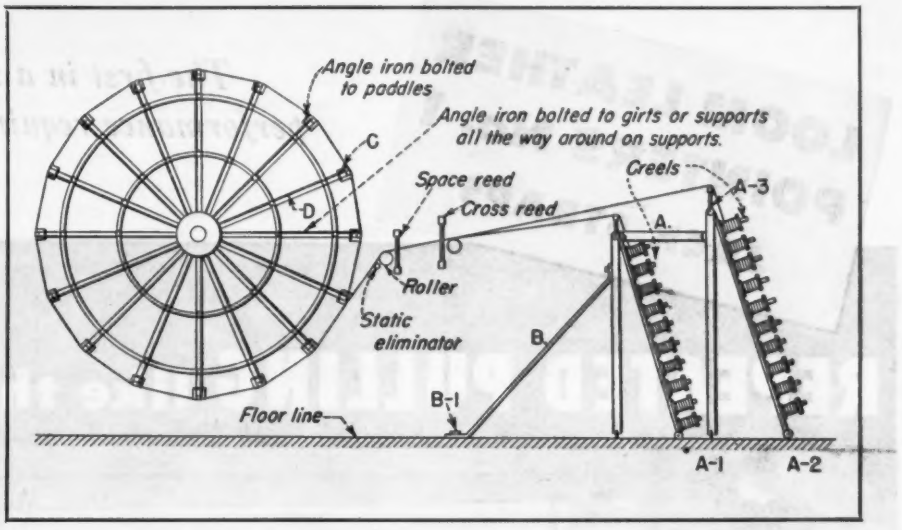

Fig. 1. Brace double creel and reel as shown when using horizontal (Swiss) warping system.

As there will be two bands on the 1,728-end warp previously mentioned, the creel need be moved only once from the first to the last (second) band. Note in Fig. 1 that *A* indicates a strip of metal fastened from creel to creel by means of a wingnut that can readily be removed for banking-in the front creel. If space from *A-1* to *A-2* is sufficient, a small person can pass through for replacing run-outs. The height of the back creel, however, requires a tall person for placing in ends through the creel comb *A-3*.

Need for fastening the creels is further understood when considering the weight of the filled creel and the strain during warping. Rod *B* is secured solidly to the front creel, but its flattened end *B-1* fits against a lag or bolt in the floor. Similar bolts are spaced so that, when the creel is positioned for the first bank, the rod foot *B-1* is placed against the bolts to prevent tipping. When moving the creel to position for the next band, the feet are placed directly behind the next set of bolts. Thus the creels can be rolled either way without trouble.

In warping, the monofilament nylon passes through the cross reed and, next, the space reed. When a static eliminator is used, yarn flying and spreading are prevented; thus, a regular loom reed may be used for spacing. A 24-dent loom reed, 2 ends per dent, can be used. No lease rods need be used on heavy yarns, except when placing in the cord.

STRENGTHEN WARPER. It will also be discovered that the usual warper frame lacks sufficient strength to handle monofilament yarns. Terrific pressure will buckle the frame. To prevent this, it will be necessary to strengthen the frame with angle iron as shown in the illustration. The angle iron *C* is fitted to extend within ⅛-in. of the paddle edges and is positioned between supports. Additional angle iron *D* is fitted to run along the supports, in toward the axle. These irons are bolted to the supports and the ends bolted to the paddle angle irons. A frame braced according to these suggestions is capable of holding 10,000 or more yards without danger of buckling.

Warp-end breakage is rare. On the finer monofilament yarns, a cool room is not particularly troublesome; but nevertheless, with more heat, the yarn becomes more pliable and can be handled more easily. Temperatures up to 96° F. will be found ideal providing employees can stand it.

Paperless beams are a necessity to obtain maximum amount of yarn on the beam.

Necessary on all monofilament yarns are steel beams. The crushing power of these strong yarns will press a wooden beam into an oval shape; and when these crushed beams are later used on other yarns, the last 30 to 100 yd. will often result in barré cloth and numerous other defects.

The use of an all-steel beam with adjustable flanges for width is recommended, as it may be necessary to increase or decrease the width according to the weave. These beams, obtainable from a few manufacturers, can also be used on practically all other

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JACK STRAPS

The first in a series discussing the performance requirements of loom leathers:

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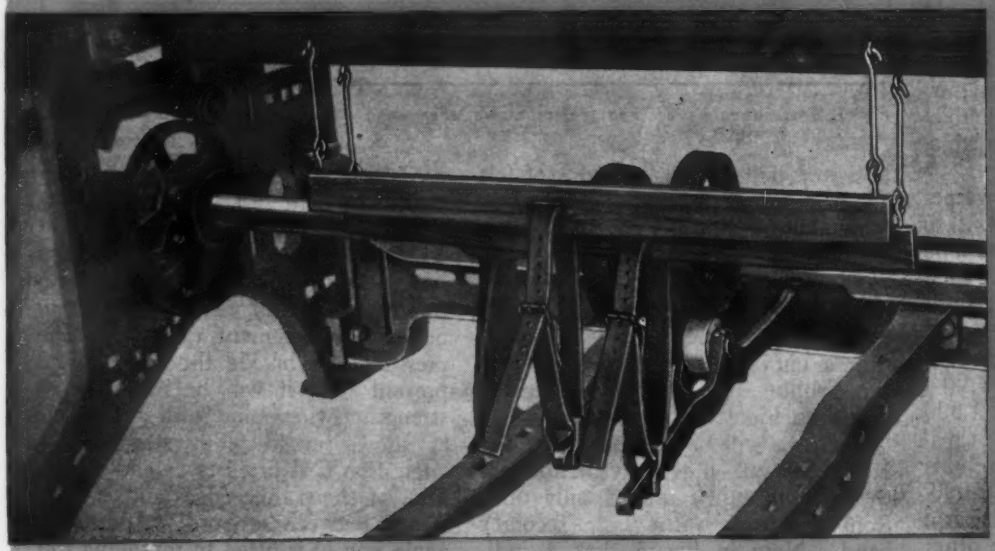

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The Problem: to pull down the harness one to two times each second, exerting effort against the resistance of the other harness which it has to *lift*.

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yarns and are nearly indestructible.

HEAVY YARNS. On the heavier gages of monofilament yarns, the tension must be kept so high that the methods described for the finer numbers are unsatisfactory. For instance, on the types which run approximately 20 ends per inch, the number of ends is lower, but the tension is increased. Even the built-up, renovated warper would fail to give satisfactory results. The pull and stretch would be too great, and the frame would, with a heavy bank, crack along the supports next to the axle and at points where spokes are bolted to the reinforcing rings. A new method of warping or beaming is therefore the logical solution.

For these heavy yarns, section-beam warpers offer a compact unit requiring less floor space than the horizontal warper. For certain yarns, several beams can be run from a creel to unwind the packages completely and thus reduce knots. But on heavy monofilaments, tension control is difficult. This is more noticeable when running the section beams into a full warp beam. The full section beam may appear satisfactory, but as the warp feeds off and tension is applied, the outer layers of yarn will sink into the lower layers and become a mass of tangled yarn.

NEW MACHINERY. Solution of the vexing problem of producing a warp with satisfactory density developed through several stages. From these various steps, ideas grew to such proportions that a new line of machinery became plausible. The basic idea, of course, was to reduce the cost of warping up a loom, since known methods were entirely too costly. The cost of the old system on heavy monofilaments was approximately 0.013¢ per yard. The cost of the new system, after trial and error, became about 0.002¢ per yard—a reduction of almost 85%!

Experience in weaving cord fabrics suggested following the same principle for monofilaments. From this method of weaving from a V-creel, Fig. 2, there evolved warping directly from a bobbin creel, through a slasher, and onto a beam. The V-creel solved the first need best because of its strength and possible reduction of floor space.

The creel was built for 720 bobbins with 360 ½-in. diameter spindles on each side of the V. The creel construction was made from 2x3-in. hardwood lumber reinforced with angle iron.

Six strips of 2x3-in. hardwood were placed horizontally, bolted to six 2-in. angle-iron uprights, then 36 strips of 2x3 were placed on vertically, into which were bolted ten spindles spaced so that each bobbin would clear by approximately ½-in. The entire frame was further strengthened on the inside with steel strips and angle iron.

A top comb, somewhat similar to a bobbin-creel comb, was fashioned from sheet steel and rustless steel pins. Glass pins could have been used, but breakage would have been greater. The ends were placed in the comb in units of ten; as a result, the ten ends grouped closely could be seen readily when glancing from either side. The vertical rows of bobbins were on a slight slant, as on a regular bobbin creel.

Since a certain amount of drag was required even though revolutions were very slow, felt strips were spaced to fit over the pins. When bobbins were put in place, they rested upon the felt.

From the creel the yarn is passed through the top comb and into the narrow point of the V-creel. At this point the sides do not come together, but are approximately 38-in. apart from the one side of the V to the opposite side. A weave reed of chrome steel is positioned for the ends to pass through before going to the slasher cylinders. Each strand of yarn passes through a separate dent of the reed.

Guiding the yarn through the reed on a direct horizontal line, a rustless steel roller is placed near the reed. The roller is allowed to turn freely; otherwise, resin accumulations would soon cake up and create disturbances.

NO SIZING APPLIED. The monofilament yarn coming directly from the V-creel and through the first reed is fed over a roller secured at the end of the slasher or sizer, on over the large cylinder, and follows through in the same manner as if a sizing run was being made. No sizing is necessary, however, as the yarn is plastic coated.

From here on, the yarn feeding through the cylinders must be regulated somewhat. There is no let-off except the slow movement of the bobbins and the drag occasioned by the felt, the retarding action of the spindle, and the reeding. There is no size application or drying, but there must be a slight amount of heat to keep the yarn soft and pliable. There is a take-up, and therefore there must be stretch-control regulation to obtain the desired warp density to prevent soft warps. The cut marker must also be set to specified lengths. When a full-length warp is run, a cut-off is made, warp removed, and empty beam started.

A machine of 5, 7, or 9 cylinders can be used, or even one of 3 cylinders. In fact, a new 3-cylinder machine, which would have smaller-diameter cans for heating and stretch, could be placed directly behind the loom in front of a compact V-creel to make an ideal set-up for a monofilament process of weaving directly from the supply packages. Savings in labor cost would be tremendous.

A slight amount of heat can be applied to the first cylinder, but this application of heat must be carefully checked and controlled, as too much would ruin the coating and thin out the yarn diameter. This would result in severely damaged cloth, for if the coating is slightly gummy and adheres to other strands, it would be impossible to run off the warp.

After coming through the cylinders and rollers, a cross is hand picked and placed in the leasing reed. A suitable reed for this purpose is the fan-type. Other reeds open at the top can be used; but after picking the lease and placing each end in its proper dent, a reed cap should be attached over the open ends to prevent an end from flying out if a knot feeds through. Covering the top also strengthens individual reed wires.

If the monofilament weave calls for

(*Continued on page 198*)

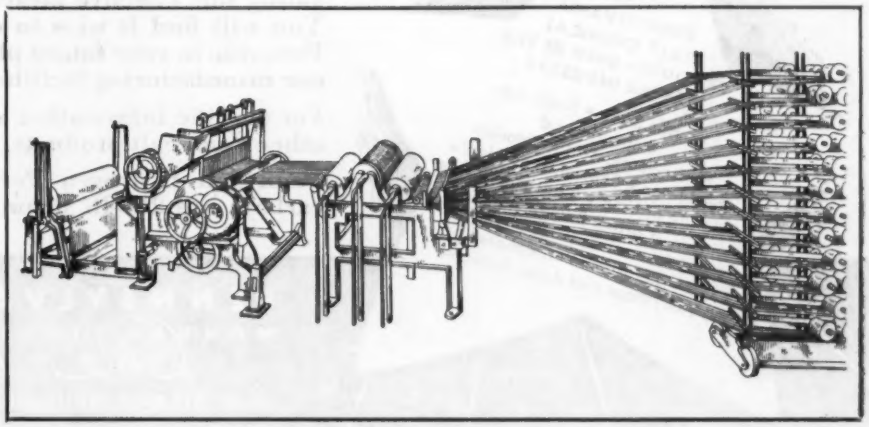

Fig. 2. Artist's interpretation of possible system for weaving monofilaments directly from producer's packages.

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Hydrogen Peroxide is currently under allocation by WPB. Due to current needs of the war effort very little will be available for the bleaching of civilian fabrics and only limited amounts for military textiles during the next few months. But a wide number of industries are investigating this effective bleaching agent for postwar usage. You will find it wise to consider Penn Salt Hydrogen Peroxide in your future plans. We are greatly expanding our manufacturing facilities to serve your postwar needs.

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Penn Salt Hydrogen Peroxide is supplied in 120-lb. carboys and 265-lb. drums.

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Dan River Reports on RESEARCH PROGRESS

HIGHLIGHTS: **Physical and chemical research lead to numerous patents and patent applications. Emphasis has been on finishing processes. Over 100,000,000 yd. of cloth processed as result of continuous-dyeing development.**

"ALERT TO THE FACT that an expanding future for the American textile manufacturing industry will be dependent in a large measure upon physical and chemical research, Riverside & Dan River Cotton Mills, Inc., began several years ago to lay down a program of research in natural and synthetic textile fibers, yarns, and fabrics; in textile dyeing and finishing; and in chemical and mechanical practices as applied to various textile methods and processes."

The foregoing is the introductory paragraph of a booklet released last month by Riverside & Dan River Cotton Mills, Inc., in which a description of many of its developments to date and its long-range research program are presented with a digest of patents and patent applications.

Dan River's research division is directed by H. M. Chase, who has been for many years head of its chemical and dyeing research and director of all applied chemistry and dyeing. Probably the most outstanding development to date has been the broad field of application of various bonding agents to textile fibers, yarns, and fabrics. One of the pioneers in this field is Dr. Harley Y. Jennings, a member of the research staff. Another is Dr. Floyd E. Bartell, head of the department of colloidal chemistry at Michigan University, who is a consultant of the Dan River research division.

PATENTED PROCESSES. The booklet summarizes seven patented methods and processes employed by Dan River Mills as follows:

1. A method to bestow increased strength and resistance to wear upon textile fabrics by treatment with a water-insoluble gum, a natural resin, or a synthetic resin. Such treated fabrics are useful in apparel and are particularly suitable for use as base fabrics in plastic laminates.

2. Yarns or threads treated with bonding agents while under tension show gains in strength of from 20 to 70%. In addition, stretch is decreased 30 to 60%, pigment dyes may be affixed in the same solution of bonding agents, and many other beneficial results are obtained.

3. Knitted or woven fabrics may be rendered "run" and "slip" resistant by treatment with bonding agents. This patent applies particularly to nettings and similar open-weave constructions, which may be treated so as to prevent "slipping" at the traverses of the yarns. The treatment is said to be in extensive use for the processing of netting used by the American armed forces for protection against insects. It is reported to be the only method whereby "slipping" may be successfully prevented in such nettings. This process has added importance because of its applicability to many of the diverse types of fabrics now being produced by flat knitting.

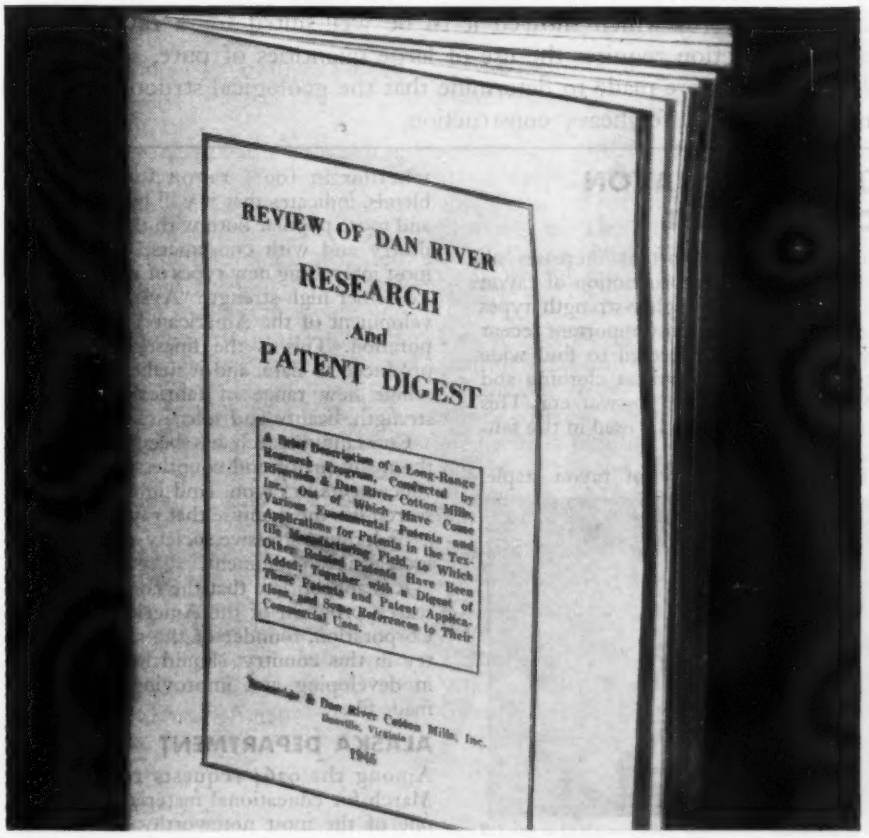
4. A method of recovering solvents makes possible the use of an organic solution of resins for textile processing without fire and explosion hazard.

5. Textile materials may be permanently dyed by a basic process of pigment dyeing, which also permits the application of various protective finishes in the same bath of pigment dyes and in the same operation.

6. Knitted articles may be treated with a solution of latex or other substance whereby "laddering" or "runs" are prevented.

7. Cloth may be treated with resinous substances whereby flexibility and impermeability are attained, thus rendering the cloth more suitable for many commercial uses, such as for pump diaphragms.

PATENT APPLICATIONS. In addition to the foregoing, the booklet lists re-

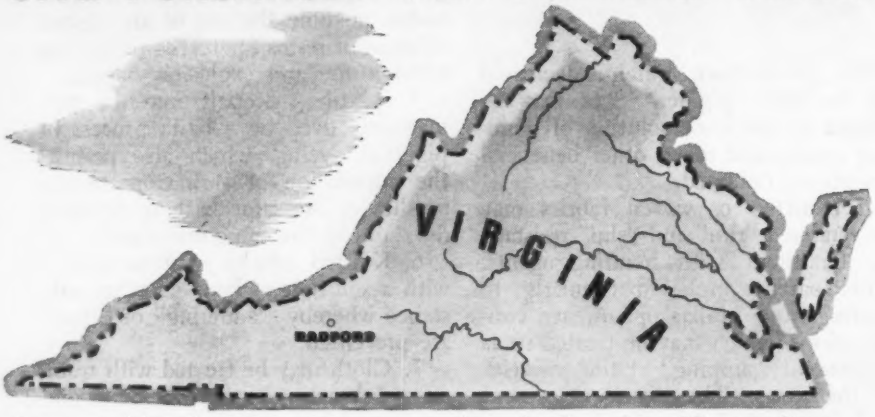


Booklet issued during annual meeting of Dan River stockholders describes research activities.

RAYON REPORTS

Published Monthly by American Viscose Corporation, New York, N. Y. APRIL, 1945

SITE PURCHASED FOR POSTWAR PLANT



As part of its plans for postwar expansion, the American Viscose Corporation has purchased a new plant site at Radford, Va. The plant will produce viscose process rayon staple fiber. Construction work will be started when the progress of the war makes it possible to obtain the needed materials and equipment.

Several surveys of prospective locations were made before the Radford site was selected. An important factor was the analysis of the water in New River at Radford, which showed it to be well-suited for a rayon plant. Rayon production requires the use of large quantities of pure, soft water. Also, drillings were made to determine that the geological structure of the land is satisfactory for heavy construction.

FUTURE FOR RAYON LOOKS BRIGHT

After the war, important increases all along the line in the production of rayon are indicated. The higher-strength types of rayon, one of the most important recent developments, are expected to find wide usage in fabrics for civilian clothing and industrial needs in the postwar era. This type of rayon will also be used in tire fabric, as at present.

The great versatility of rayon staple, whether in 100% rayon fabrics or in blends, indicates that it will become more and more popular both with the textile industry and with consumers. One of the most interesting new types of rayon staple, 1.0 denier high-strength "Avisco," is a development of the American Viscose Corporation. This is the finest rayon fiber produced to date, and it makes possible a whole new range of fabrics of unusual strength, beauty and softness.

One of the newer sheer crepe fabrics made of a fine 1.0 denier viscose rayon yarn. Fabrics like this are bringing new luxury within reach of the average purse.

Constant research has been the key to the many major and countless smaller advancements in rayon. And in constant research lies the promise that rayon's role in a modern, progressive society will become increasingly prominent.

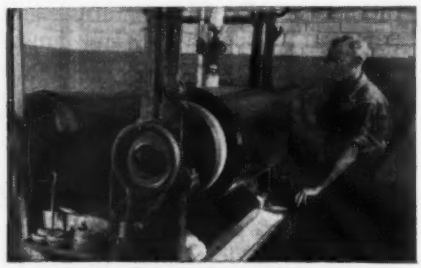
It is appropriate that the continuous research program of the American Viscose Corporation, founder of the rayon industry in this country, should lead the way in developing and improving this man-made fiber.

ALASKA DEPARTMENT

Among the 9764 requests received in March for educational material on rayon, one of the most noteworthy came from Nome, Alaska, from a retailer who describes himself as a dealer in whalebone, walrus ivory, seal skins, polar bear hides and arctic furs.

HELP WANTED AD GETS RESULTS

Other employers may find encouragement in meeting specific manpower shortages in a recent experience of the American Viscose Corporation. A small 4-inch ad, without signature, headed simply "Chemists Wanted," brought 175 replies . . . an unusually large number for such a highly trained type of personnel.



LABORATORY USES MILL-SIZE MACHINERY FOR RESEARCH

The Textile Research Department of the American Viscose Corporation, at Marcus Hook, Pa., is completely equipped with mill-size machinery for studying all phases of textile production. Shown here is a dye jig, typical of the equipment with which the Department works.

MAKE USE OF 4-PLY SERVICE

1 PRODUCT RESEARCH
Helps you get the right yarn or fiber.

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Helps you design new fabrics.

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Helps solve production and finishing problems.

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Helps provide scientific selling facts.

AMERICAN VISCOSE CORPORATION

Producer of
CROWN* *Rayon Yarns and Staple Fibers*

Sales Offices: 350 Fifth Avenue, N. Y. C. 1; Providence, R. I.; Charlotte, N. C.; Philadelphia, Pa.

Plants at: Marcus Hook, Pa.; Roanoke, Va.; Lewistown, Pa.; Nitro, W. Va.; Parkersburg, W. Va.; Meadville, Pa.; Front Royal, Va.

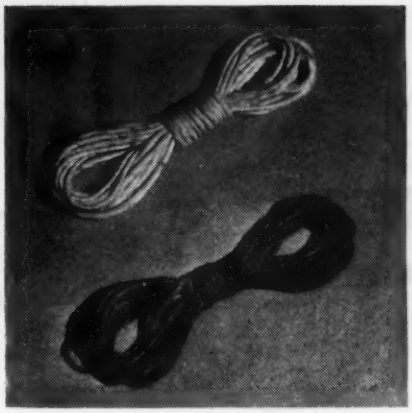
*Reg. U. S. Pat. Off.

sults from the research program for which applications for patents have been made.

One of the most publicized of the new developments for which patent application has been made is that of forming yarn directly from roving by means of compacting the roving and treating it with a bonding agent. This was described in the November issue of TEXTILE WORLD, page 109.

Another development is a process which permits continuous dyeing with vat dyestuffs and which, it is claimed, at the same time gives results in depth of shade, fastness, and appearance comparable to older, slower, and more costly methods. Records show that regular runs of fabric through this process range in speeds from 80 to 100 yd. per min. and that more than 100,000,000 yd. of cloth has already been processed by this method.

A third development described, for which a patent has been sought, is a process for the simultaneous dyeing with fast colors of mixed fabrics containing cellulosic fibers and acetate fibers in such manner that both are dyed an equal depth in shade. The booklet does not explain how this is accomplished, although it does say that the process "would also increase the range of dyestuffs adaptable to acetate rayons."



Bonded roving from Dan River. Colored yarn was dyed during bonding.

The "Dan River-type" revolving clearer is also mentioned as a development. This clearer was previously described in the *Saco-Lowell Bulletin* in September, 1944. It is used on drawing frames, and its outstanding feature is an apron which is in continuous motion as the machine runs and which carries away waste picked-up by the top rolls of the drawing frame. According to the *Saco-Lowell Bulletin* this clearer keeps the top rolls clean at all times, runs for about 60 to 120 hr. without attention from the operator, and has a scouring action which prevents the return to the passing stock of undesirably wasty matter picked up by the clearer.

A method of dyeing yarns or threads to give a "uniform color and finish in one speedy and economical operation" is also mentioned, but very few details are given. It is stated that in practice the method has been found equally effective for viscose and acetate rayons, nylon, Vinyon, Aralac, spun viscose, cotton, wool, silk, etc. This would indicate a method of pigment dyeing.

According to one source, "The Dan River organization is to be complimented both on the accomplishments of its research program and its willingness to make the new developments available to the textile industry." Riverside & Dan River Cotton Mills own a trade mark "FIBER-BONDED" which is applicable to many of the products and the processes described here, whether produced by Dan River or licenses.

Riverside & Dan River Cotton Mills, Inc., Patents

Following are patents now in full force and effect owned by Riverside & Dan River Cotton Mills, Inc.

A brief description of each of the patents is included:

Patent No. 2,097,012 concerning the treatment of a textile fabric with various bonding agents whereby it is rendered resistant to abrasion and is reinforced in tensile strength, thus improving its wearing qualities. This patent, entitled "Treating Textile Fabric," was issued Oct. 26, 1937, to Floyd E. Bartell.

Patent No. 2,220,958 on the treatment with bonding material of yarn and thread under tension, thus greatly increasing the tensile strength, smoothness, and uniformity; and decreasing the stretch. It is also referred to as a method for making higher-tenacity cotton and synthetic yarns. This patent, entitled "Tensioned Yarn and Thread and Method of Forming Same," was issued Nov. 12, 1940, to Harley Y. Jennings.

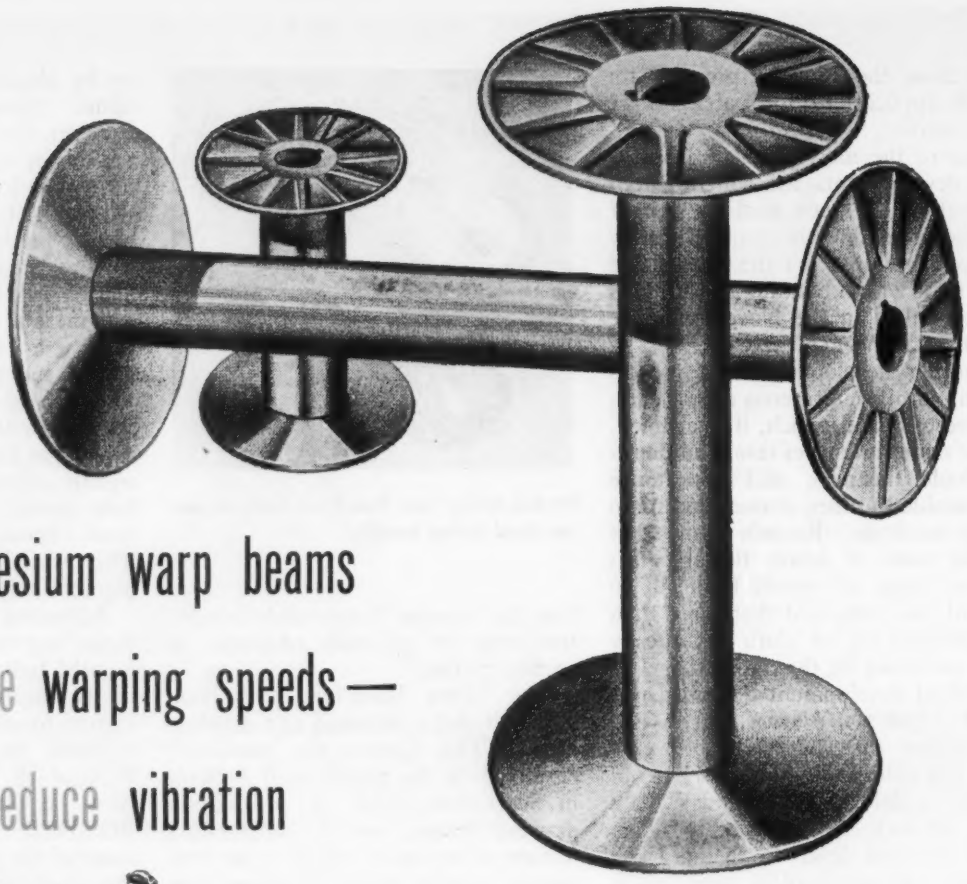
Patent No. 2,281,830 concerning the treatment of textile fabrics, knitted and woven, with bonding materials whereby wear-resisting qualities of the fabrics are increased and "laddering" in knit fabrics and "slipping" in woven fabrics are materially reduced. It is also referred to as a finish that adds stability to fabrics. This patent, entitled "Process of Treating Textile Fabrics and the Products Thereof," was issued May 5, 1942, to Lloyd G. Copeman and Floyd E. Bartell.

Patent No. 2,312,910 concerning an apparatus and process for the recovery of solvents from substances or materials treated with a solution of a resinous substance in such solvents. This patent, entitled "Recovery Apparatus," was issued Mar. 2, 1943, to Harley Y. Jennings.

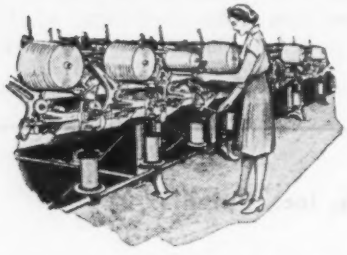
Patent No. 2,334,199 deals with the art of fixing or setting of a pigment dyestuff on a fabric by means of a water-insoluble resinous substance; it is also referred to as the art of dyeing with pigmented resin emulsions. This patent, entitled "Process of Treating Textile Materials," was issued Nov. 16, 1943, to Harley Y. Jennings.

Patent No. Re. 21269 involves the treatment of knitted fabrics with a solution of latex or any other substance whereby the threads are covered with a binding material at the points of contact, thus preventing "laddering." This patent, entitled "Process of Coating Knit Articles and Products Thereof," was reissued Nov. 21, 1939, to Lloyd G. Copeman.

Patent No. 2,348,740 concerns a process of treating fabrics to make them impervious, flexible, and durable. Patent, entitled "Diaphragm and Method of Forming Same," was issued May 16, 1944, to Harley Y. Jennings and Jos. A. Gillen.



Magnesium warp beams increase warping speeds— reduce vibration



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Patents Show Possibility of LIGHT-PRINTING on Cloth

HIGHLIGHTS: Resins may hold answer to retention problem. Printing can be in colors. Fine detail possible. Much research still needed.

By LINTON C. REYNOLDS
Ware Shoals Bleachery, Ware Shoals, S. C.

A small piece of film might, conceivably, print a large, delicate pattern more economically than is now possible.

THE PRINTING OF TEXTILES as it is now being done on the ordinary printing machine, with engraved rolls imparting the pattern on the cloth, is almost identical to that done early in the 19th century.

Currently a change is being brought about by the wide-spread use of resins as binders for holding pigments on cloth. This is reducing the depth of the engravings in the printing roll and is eliminating the need of ageing, with its headaches. The pigments are merely dried on the cloth or, for best fastness, are passed through a curing oven. There is no further processing such as oxidizing and soaping. All of this is improvement, but the printing still is carried out by the same mechanical methods that have been practiced for years.

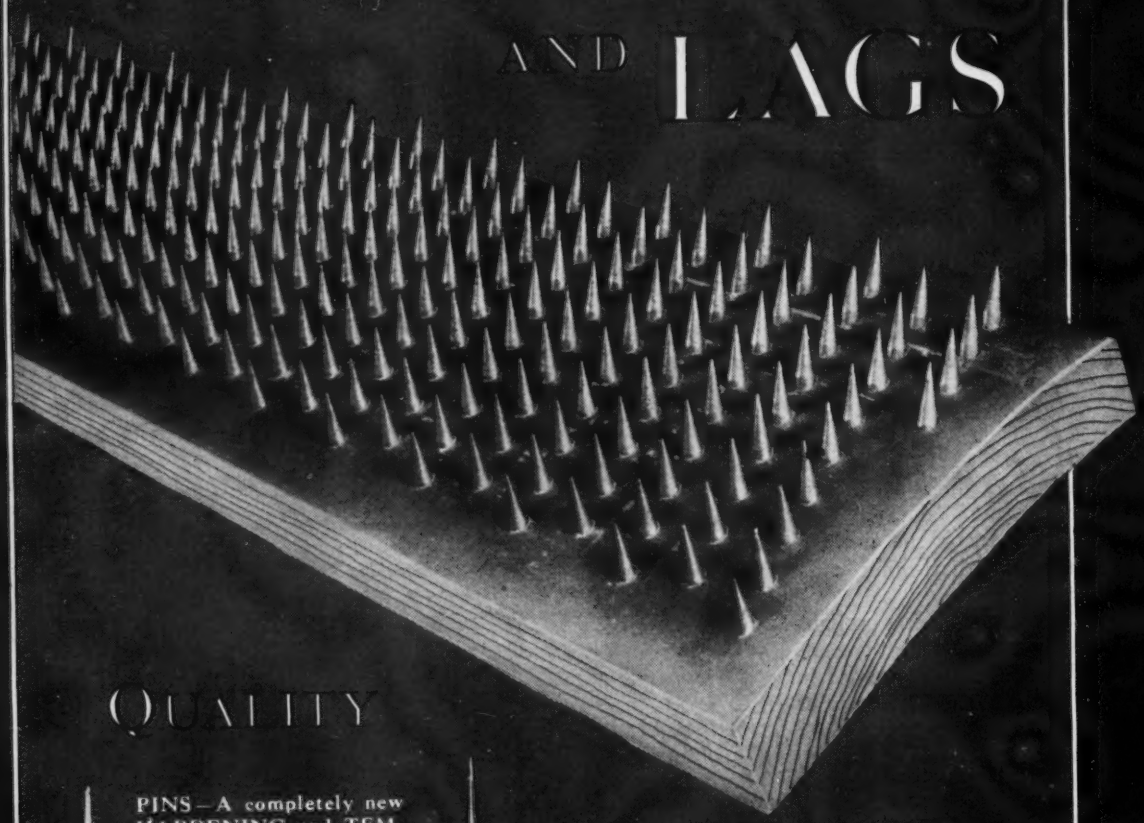
PRESENT METHODS. There are indications that in the future a new method of imparting designs to textiles in an entirely different manner may be evolved. Some day it may be possible to print cloth with light-rays. Of course, there are already ways to print pictures on cloth from photographic negatives, such as a portrait in the corner of a handkerchief, or a scene on a large piece of cloth. These are all accomplished by coating a light-sensitive emulsion on the cloth and then allowing the light passing through a photographic negative to fall upon the light-sensitive material. This material is then treated in the usual photographic developer, which reduces the exposed silver salt to metallic silver, thereby producing the image in silver on the cloth. In this process, however, the resulting image is either black or sepia colored; but the cloth itself is not colored. The photographic emulsion, which contains the image, is the only substance colored; and if this coating be washed off, there is no longer any picture in the cloth.

In recent years, there has been tremendous work done in color photography and much basic research on dyes and their various reactions in emulsions; thus, it is highly possible that some of this knowledge may be applied with success to textile printing. Following are some examples of what has been done toward obtaining a colored photographic image, in a gelatin emulsion. In U.S. Patent 2271176, issued to Dr. Bela Jasper, (J. S. Friedman, *American Photography*, 37-1-38) the silver image is used to decompose a diazonium salt. The principle is that a gelatin layer carrying a silver image will destroy a diazonium salt *in situ* with the silver image under certain conditions. Because of this imagewise decomposition of the diazonium salt, it cannot react with beta-naphthol or naphthols of the AS type to form a dye at this point. The procedure is as follows:

A light-sensitive, silver-halide emulsion is treated in a bath containing betanaphthol and caustic soda, after which the emulsion is washed and dried. These operations must be done in the dark. Now, the emulsion is exposed to light-rays and developed; then the unexposed portion of the silver halide is dissolved with sodium thiosulphate, washed, and treated with a solution containing a diazonium salt, thiourea, sulphuric acid, and water. Following this, the emulsion is again washed and bathed in a solution of soda ash, at which point the dye will form. Any remaining silver is completely removed with copper chloride, followed by sodium thiosulphate. This process will yield a color image in the emulsion. I.G. has patented the use of indigosols for toning photographic emulsions (U.S. Patent 1945658) (J. S. Friedman, *American Photography*, 36-10-42). The indigosols are incorporated in the silver emulsion; then, after exposure, the silver image is developed and the film treated with a bleach solution containing ammonium persulphate, sulphuric acid, copper sulphate, potassium bromide, and water. This process produces variously colored images, depending on the indigosol used.

Another method (T. T. Baker, *American Photography*, 38-8-16) which may be used to obtain an image in color is to incorporate within the

PINS AND LAGS



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Doffer Teeth
Shoddy Picker Teeth
Wood Pulp Teeth

Breaker Lag
Main Cylinder Lag
Carding Beater Lag
Cotton Picker Lag
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Worker Lag
Steel-Faced Rag or Shoddy Picker Lag
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emulsion a small amount of naphthol, for example, 2:4 dichlor-alpha-naphthol, and then expose the emulsion to light in the usual way. Development is then carried out with a suitable reducing agent, such as diethyl para-phenylene-diamine, which will yield an image of brilliant blue. Different colors may be obtained by substituting other color formers in the emulsion. This last method, it seems, requires less processing and would probably be cheaper.

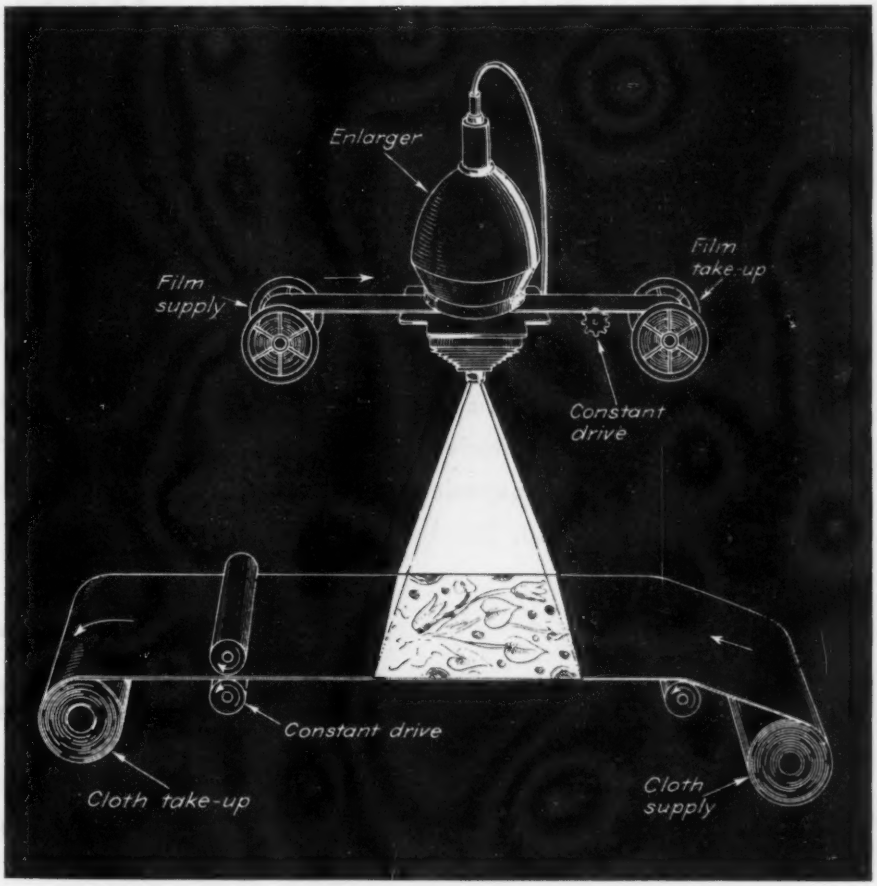
POSSIBLE FUTURE METHODS. How to tie these photographic processes into the printing of textiles is the point where much research must be done but, if accomplished, it would bring about a drastic change in the textile-printing industry. There are possibly two methods by which this might be done. One method would be to pad the cloth with a water-solution of the light-sensitive materials without gelatin; and, when the color is developed, it would be incorporated in the fabric. Of course, the difficulty met with in this is that the sensitivity of the silver salts would be low; though it is highly possible that a substance might be found which would act somewhat as a catalyst, such as gelatin does in the usual photographic emulsion. Dr. Sheppard discovered, after much work, that the degradation product, allyl-thiourea, formed when gelatin is heated a long time is responsible for the increase in sensitivity when gelatin is used in the emulsion. It may be that some substance could be added to the padding solution which would act in much the same manner. In fact, potassium thiocyanate has been used in some emulsions to increase sensitivity. With relatively short exposures, the dye could be formed within the fabric and would probably have about the same fastness as that same dye when applied to fabrics in the conventional manner.

The second method would probably be the easier and cheaper to work out. Here, the light-sensitive materials would be incorporated in a resin binder and coated on one side of the cloth by use of a solution which is thin enough not to form a film in the interstices of the cloth, but thick enough to stay mostly on one side. Of course, in this procedure the finished color on the cloth would be in the form of a pigment, bound to the cloth with a resin such as is now done in the pigment-printing processes, but would have all the advantages resulting from the photographic process.

The first objection offered to any of these processes as applied to textiles is the cost; and, it is true, it would be many times the cost of present-day printing methods. However, most of the silver used in the process could be reclaimed; as it is finally completely removed from the cloth and acts only as a means of obtaining an image with photographic qualities—that is, contrasts and gradations impossible by mechanical means. This would lower the apparent cost of the method; and, secondly, these procedures would be used on fabrics for special purposes which could demand a higher price, such as bedspreads, slipcovers, draperies, etc.; although with increase of knowledge and improvements in methods, they may some day reach the stage of being applicable to ordinary print-cloth.

POSSIBLE ADVANTAGES. On the opposite side of the picture, think of all the improvements obtainable over the conventional method. The length of repeats would be practically limitless. Probably, the pattern to be printed could be photographed on a motion picture film and this film projected onto the light-sensitive cloth, while the film moves at a constant steady rate in proportion to the speed of the cloth traveling before it. In other words, a motion picture film 1-in. wide, enlarged by projection onto a piece of cloth 36-in. wide, would travel 1 in. for each 36-in. movement of the cloth. In this way, 1,000 ft. of film would give a repeat on the cloth 12,000 yd. in length. A repeat that long is probably absurd, but one to cover a bed-spread or long drapes would be more in the line of needs and would require only a few inches of film. There would be no print-rolls to scratch, no doctors to file or lint up, and no heavy sets required as in the usual printing methods. Also, think of the delicate tones and variations in depths possible with this procedure, far beyond anything that can now be done.

By this method, only one color would be formed on the cloth; but it may be that three separate light-sensitive resin mixtures could be applied to the cloth, such as is now done in color photography. One would be developed up with a yellow dye, one with a red, and the third with a blue dye which would give a natural color photograph on the cloth in any design imaginable. The "fit" of the pattern would be of no concern, as all three would be printed in color at the same time.



A strip of film 1-in. wide and 100 ft. long could print a pattern 1,200 yd. long without a repeat if light-printing were used.

THE COLOR PROBLEM GROWS

Often the solution of one problem means the creation of another.

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LENO War-Weaves Easily Reconverted to Shirtings

HIGHLIGHTS: Mills equipped to make leno fabrics for military use can change quickly. Fancy summer shirtings can be made. Various stripes predominate.

By THOMAS NELSON

MANY AND VARIED are the fabrics being manufactured for military purposes. One in demand has been a leno weave, which in some instances required a conversion of looms and the addition of certain parts such as doup heddles and jumpers. Mills making military leno fabrics should be planning their manufacturing so as to be prepared to take advantage of the reconversion period which is rapidly approaching.

Ideas for new fabrics and designs can be obtained by a study of leno fabrics which have been used extensively during the past few summers for men's shirting. A number of these fabrics from which other patterns and designs can be made are herewith illustrated.

SUMMER SHIRTING FABRICS. Many light-weight fabrics are used in the manufacture of men's shirts. Some of these are the following: plain weave, white and solid color; end and end, solid and in stripes; narrow satin stripes on plain ground; dobby weaves on plain ground, and sometimes designated as white on white; and jacquard effects.

Other fabrics, which have been used quite extensively during the past few years have had for their base leno weaves. These fabrics are strong, open and cool, and especially suitable for hot summer wear. Most of these fabrics are made from the simple leno weaves often combined with narrow stripes—plain and sateen. Also, these fabrics are often ornamented by the addition of narrow colored stripes to give pleasing effects.

The solid-color shirting fabric in Fig. 1 is composed of a plain ground, a narrow sateen stripe, and a stripe of hemstitch leno. The drawing-in draft and reed plan are given in Fig. 2, using one set of regular doup heddles. The chain plan is given in Fig. 3.

(In all the illustrations, the doup harnesses are indicated on the left-hand side of the chain plan. In Figs. 9, 12, 16, and 19, the leno is indicated only on the first and last leno sections.)

Fig. 4 is what is known as a 5-and-1 crossover leno, five picks of plain weave and one pick of leno. This fabric is made with one set of doups and can be made on the regular steel heddle or on the super doup. This fabric is very similar to the cotton marquisette required by the Philadelphia Quartermaster Depot from which an initial invitation for 50,000,000 yd. was issued in 1942. The only difference in the weave of the two fabrics is that in Fig. 4 there are five picks of plain weave and one pick of leno, while the government fabric requires three picks of plain and one of leno. The same drawing-in draft and reed plan is used, but the pattern chain is built for five picks of plain weave and one of leno instead of three picks of plain and one of leno. Fig. 5 is the drawing-in draft and reed plan. Fig. 6 is the chain plan made for the regular steel heddle doup, while Fig. 7 is for the super doup.

Fig. 8 illustrates a fancy shirting composed of plain, twill, and leno stripes; Fig. 9 is the drawing-in draft

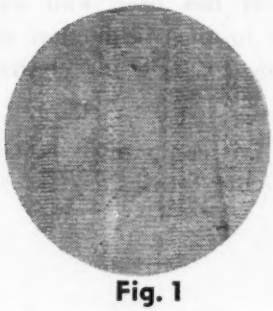

Fig. 1

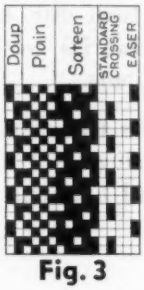

Fig. 3

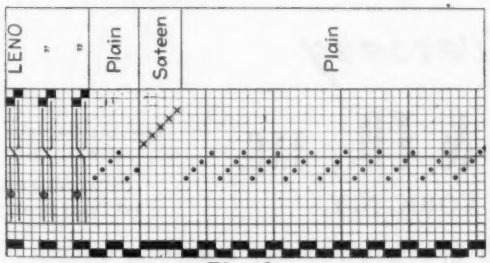

Fig. 2

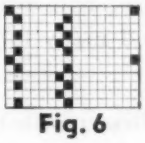

Fig. 6

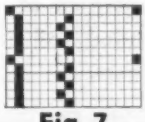

Fig. 7

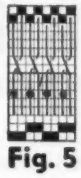

Fig. 5

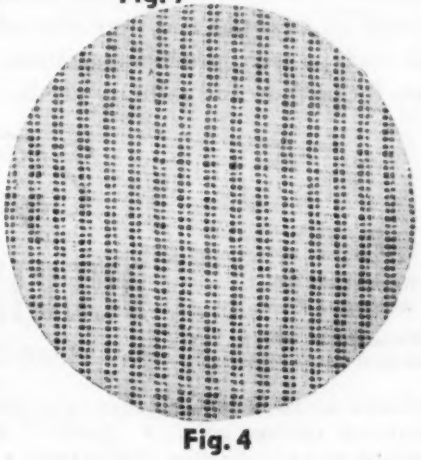

Fig. 4

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and reed plan; and Fig. 10 is the chain plan. A super doup can also be used to make this fabric.

Fig. 11 illustrates a plain leno block effect in the fabric, the threads being arranged 4 black, 4 white all across the fabric. The fabric has one end crossing three in the leno. Fig. 12 is the drawing-in draft and reed plan, and Fig. 13 is the chain plan using the regular doup heddle. Fig. 14 is the chain plan using the super-doup heddle.

Another leno fabric in which the colored threads are used is illustrated in Fig. 15. The leno threads are weaving plain in each change, which makes a very firm and good fabric. The drawing-in draft is given in Fig. 16. The chain plan in Fig. 17 uses the regular doup heddle. A super doup could have been used with this fabric.

Fig. 18 illustrates another fabric made with the same leno weave as Fig. 15 with colored threads added to brighten the fabric. Fig. 19 is the drawing-in draft and Fig. 20 is the chain plan, using the regular doup.

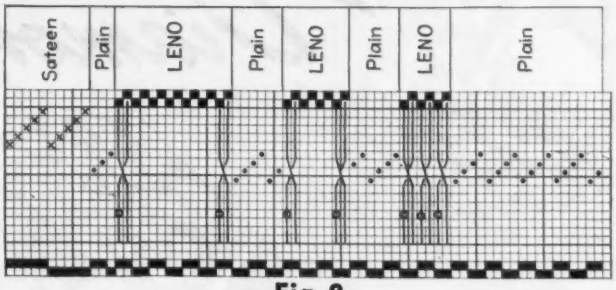


Fig. 9

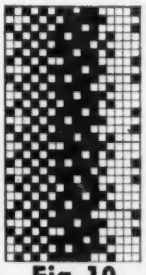


Fig. 10

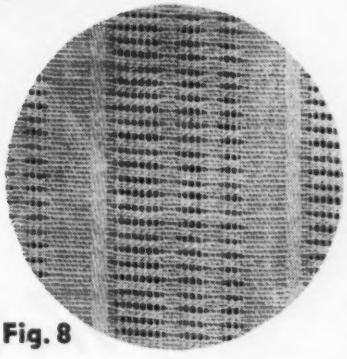


Fig. 8

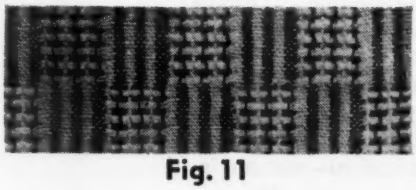


Fig. 11

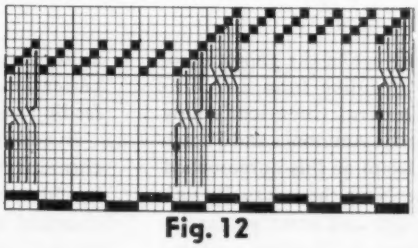


Fig. 12

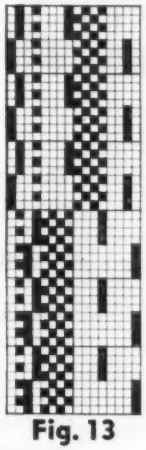


Fig. 13

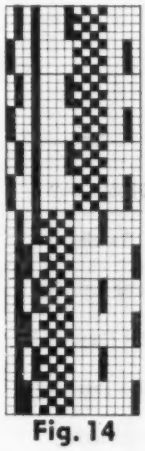


Fig. 14

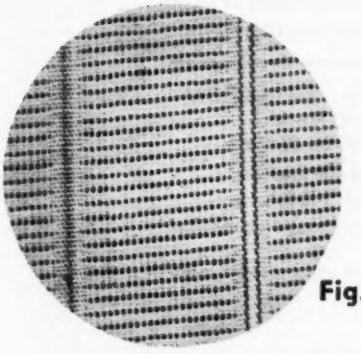
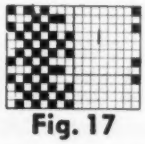


Fig. 15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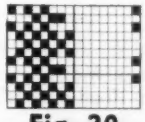
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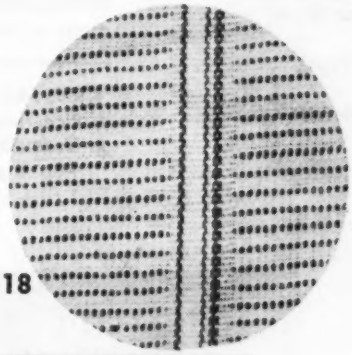
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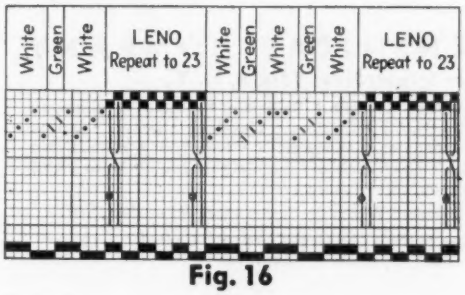


Fig. 16

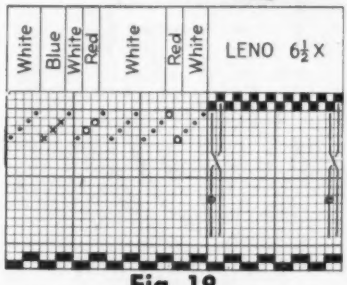
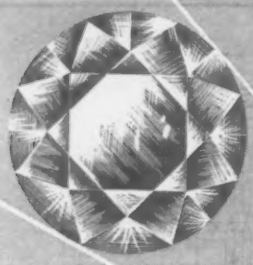
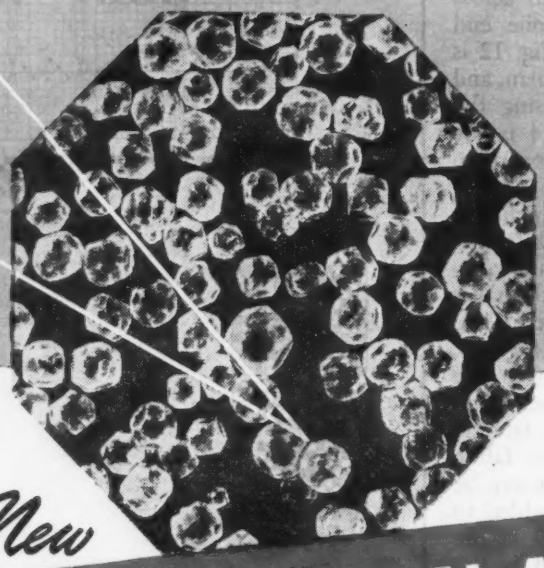


Fig. 19

Diamonds...? NO!





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Solvent Solutions Best for MILDEW-PROOFING Thread

HIGHLIGHTS: Treatment with thread in warp or skein form is less difficult than with thread on spools. Use of a penetrant makes precleaning unnecessary.

By MALCOLM C. BROCK
Cuprinol, Inc., Boston, Mass.

BECAUSE OF THE INTEREST in mildew-proofing of thread with copper naphthenate, the author made a survey of current practice and opinion in the thread field. A resume of this survey follows.

As a mildewproofing agent, copper naphthenate is acknowledged without exception to be tops as far as actual preservation of the fiber is concerned, and that is so important that too much emphasis cannot be placed on it.

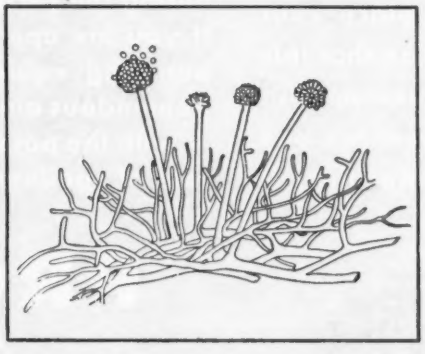
The proper method of application was found in many cases to be a new, unfamiliar, and untried art. In other cases, old methods in use have been worked out successfully; among these are methods employing modified dressing machines, slashers, and warp-dyeing machines.

To date, best results have been obtained from a Stoddard solvent application. For warp or skein, this allowed practically instantaneous wetting on warp-dyeing machinery, with even impregnation and distribution. For packages, vat dipping overnight has been successful. Several concerns have tried a package-dyeing machine for spools, but to date have had some difficulty in getting even impregnation. Package "dyeing" on springs has been more successful.

Several solvents have been tried in place of the commonly used mineral spirits. These include lower-flash solvents to increase penetration or speed up drying time and various chlorinated solvents to eliminate fire and insurance risks. In all cases, vats should be covered and set up with an exhaust fan.

From a production viewpoint, treatment in warp form seems most successful to date. Some methods use a modification of the slasher, whereby a multiplicity of single threads is run continuously through a bath, squeeze rollers, and dryers to spools.

Thoroughness, evenness, and speed of impregnation are dependent upon thoroughness of predyeing. Some persons claimed pre-cleaning, de-waxing, etc., necessary; but a penetrant added to the solvent bath has rendered this unnecessary.



Colony of Aspergillus fungus as it appears under the microscope. This fungus is of the surface-growing type. The mildew inhibitor must be more than antiseptic; it must be toxic to fungi.

Drying in the warp was by hot rollers; drying in the skein was by light extraction followed by drying on sticks (skeins were turned during the drying process); and drying in the spool was by use of a circulated-air dryer.

Wherever the solvent application was employed, the importance of familiarity with this art was appreciated because of the immediate potentialities, both now and postwar, in non-water-soluble synthetic finishes which are inevitable.

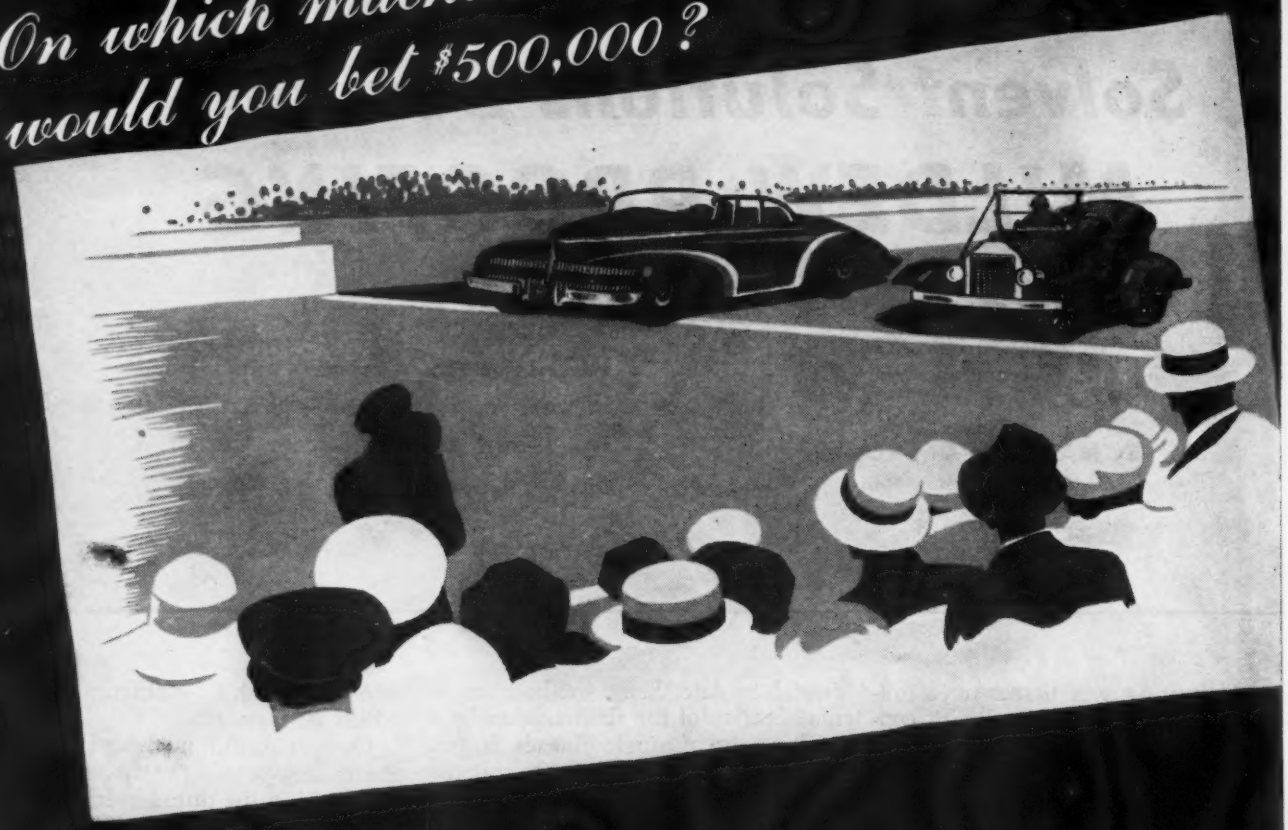
One successful method is to mix the mildew-proofing agent with fibrin wax and run the thread over a hot roll revolving in a wax tank. Contact on the roll and speed of the roll can be arranged with a traverse to "roll" the thread in order to coat the surface evenly. With known percentage in the tank and a small amount run to compute gain in weight, it is relatively easy to arrange any setting required.

Several persons claimed to have heard rather widespread stories of finished threads being too stiff or hard to be workable in sewing machines, but facts do not bear out these stories. A formulation to meet Spec. JQD 596 of Jeffersonville Quartermaster Depot (8 parts copper naphthenate 8% to 5 parts of spindle oil) in a suitable solvent such as Stoddard, for example, gives a finished thread with excellent flexibility. If desired, a small percentage of penetrant can be added to the bath.

Emulsions were turned down universally. This was on the theory that emulsions are suited for surface coatings, but not impregnations. Those who have tried have found much slower impregnation, uneven deposit, and residual solubility causing leaching due to presence of the emulsifying agents.

Where color is important, the use of zinc naphthenate, which is relatively colorless in the finished product, obviates any disadvantage of the green color of the copper naphthenates. However, for OD, only slight modifications, if any, are necessary in the dyeing.

On which machine would you bet $500,000?



If you had $500,000 to bet on the performance of the two cars shown in this illustration it would be a simple matter to decide on which machine to place your money. When you stop to realize that this represents the value of the investment in hosiery finished in a single year on one Proctor Automatic Boarding Machine, it should not be too difficult for you to see what we are suggesting. Many of these machines still in use were built years ago, during the period of heavy coarse hosiery. If you are operating an outdated piece of boarding equipment—you are betting a tremendous amount—against uneven odds—with the possibility of an extremely high rate of spoilage.

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STOCKROOM CONTROL
Should Pay for Itself

HIGHLIGHTS: A coordinated system reduces costs. Carefully designed bins designated by a code are essential. A file-index system and perpetual-inventory records can be used to control the stock.

By F. H. GUNTHER and MARCUS GROSS

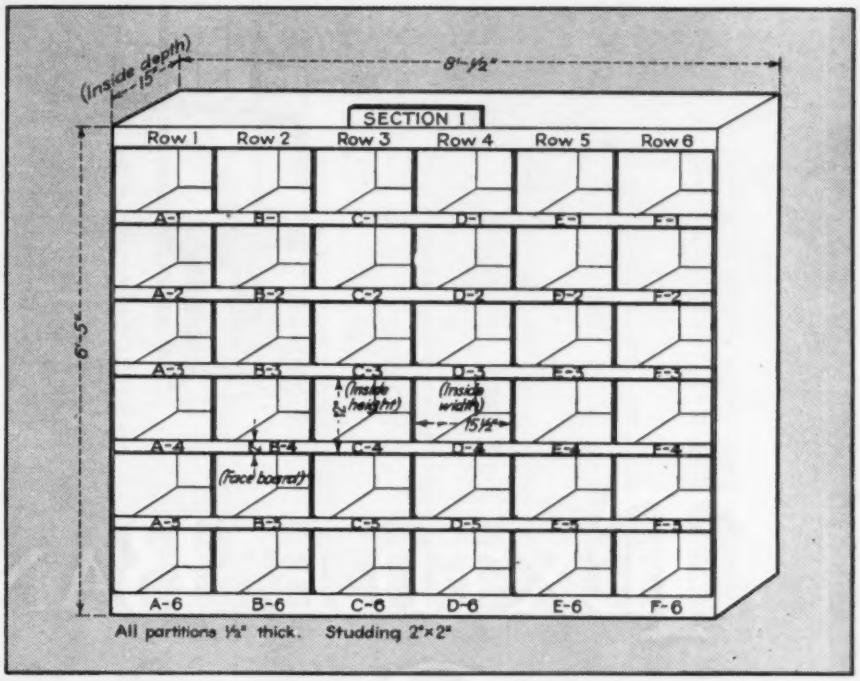


Fig. 1. Drawing of a section of bins used with the stockroom-control plan.

MATERIALS HANDLING and materials control are closely inter-related. Much material is lost because its control is either neglected or carelessly performed.

In the spinning, twisting, and weaving departments, there are many stock parts that can be accurately classified as small parts; namely, spindles, bolsters, bases, bushings, shafts, travelers, bearings, feeler parts, straps, and hooks. These small parts are valuable and often are difficult to replace. Having these parts lying in every nook and cranny in the department causes unnecessary requisitions to be placed, with the result that this inefficient handling and control is reflected in the cost sheet.

The creation of a parts stockroom which is rigidly controlled eliminates all guesswork as to the issue and control of parts and supplies. A parts stockroom does not need an elaborate layout or a complicated system of control. Low-cost bins can easily be built and a simple control system installed that will soon pay for themselves in the savings that will accrue through a regulated control of parts. In addition to reducing cost, materials control through the medium of such a parts stockroom encourages good housekeeping.

BINS. A detailed design, Fig. 1, is given for an efficient arrangement of bins which offers little or no problem as to floor space. Sections can be built back-to-back using one back partition. Each bin or file-box is sufficiently large to hold an average amount of parts that are required to be on hand and ready for immediate issue. The file-boxes, or compartments, can be extended under this system to Z-6—thus, the total number of compartments available is 156. (Sections can be built for more than 6 compartments horizontally to suit the stockroom requirements. In such a case, if the system of designating

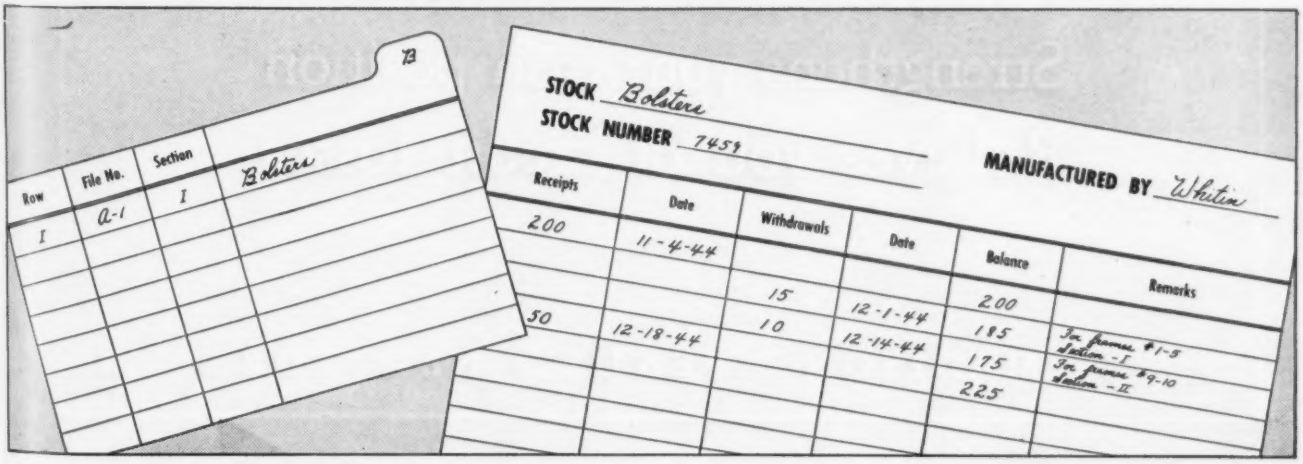
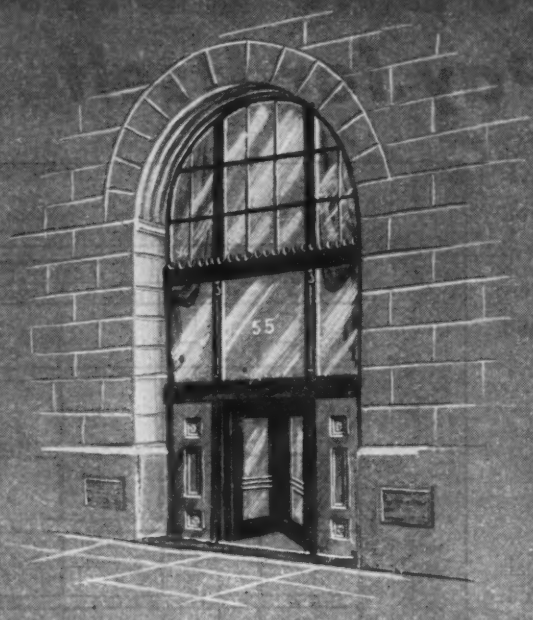


Fig. 2. The index card used should contain essential reference data for locating the parts. Fig. 3. A perpetual-inventory record is used to keep up with the quantity of any particular part in stock and the quantity issued.



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the bins cannot be extended to all the bins, a new system must be devised.)

A controlled index file is a necessary part of the system. Any type of index card, Fig. 2, can be used for reference, as long as it contains all the information relative to the compartment which it controls.

For example, if bolsters are in file box *A-1, Row I, Section I,* then this information should be recorded on the index card. The card is then placed behind the file tab *B* (for bolster) in the card index.

PERPETUAL INVENTORY. Another essential part of this control system consists of a perpetual-inventory record. This form, Fig. 3, which is referred to on the index card, Fig. 2, has appropriate columns for entries as to the quantity of parts received and withdrawn, the dates of receipt or issue of the parts, and the balance of parts in stock. When parts are checked in, an entry is made of the amount in the column headed "Receipts" and the same entry is carried over to the column headed "Balance." When parts are issued, an entry is made of the amount in the column headed "Withdrawals," and the quantity recorded is subtracted from the last figures in the "Balance" column to get a new balance. When an entry is made in the "Receipts" or the "Withdrawal" column, the date of the transaction is also entered in the appropriate date column. At the bottom of the inventory record, the corresponding letter and number of the bin for the particular stock recorded are entered.

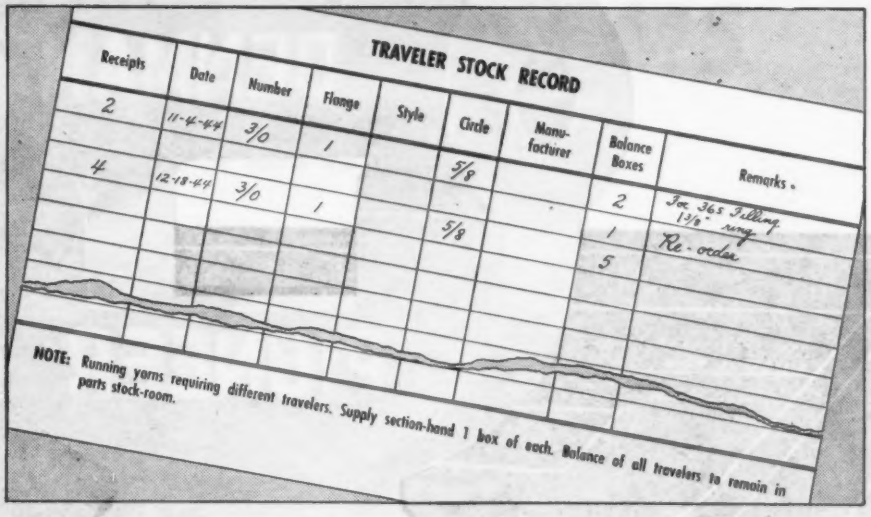


Fig. 4. A special inventory record for travelers (or any critical part used in quantity) is kept separately.

A perpetual-inventory record of travelers, Fig. 4, is kept in conjunction with the parts stock system. This traveler inventory is, in reality, a separate control record, and the entries are not tied in with the regular inventory form. Travelers are costly and easy to waste and any control over them will soon prove that a saving can be made. Separate inventory-control records can be used for other critical supplies, such as shuttles and picker sticks.

This system of stock control can be used with modifications to suit the requirements of the stockroom for any size mill. The chief point is to have a close control of stock parts at all times.

Legislation Speeds Study of Textile FIRE HAZARDS

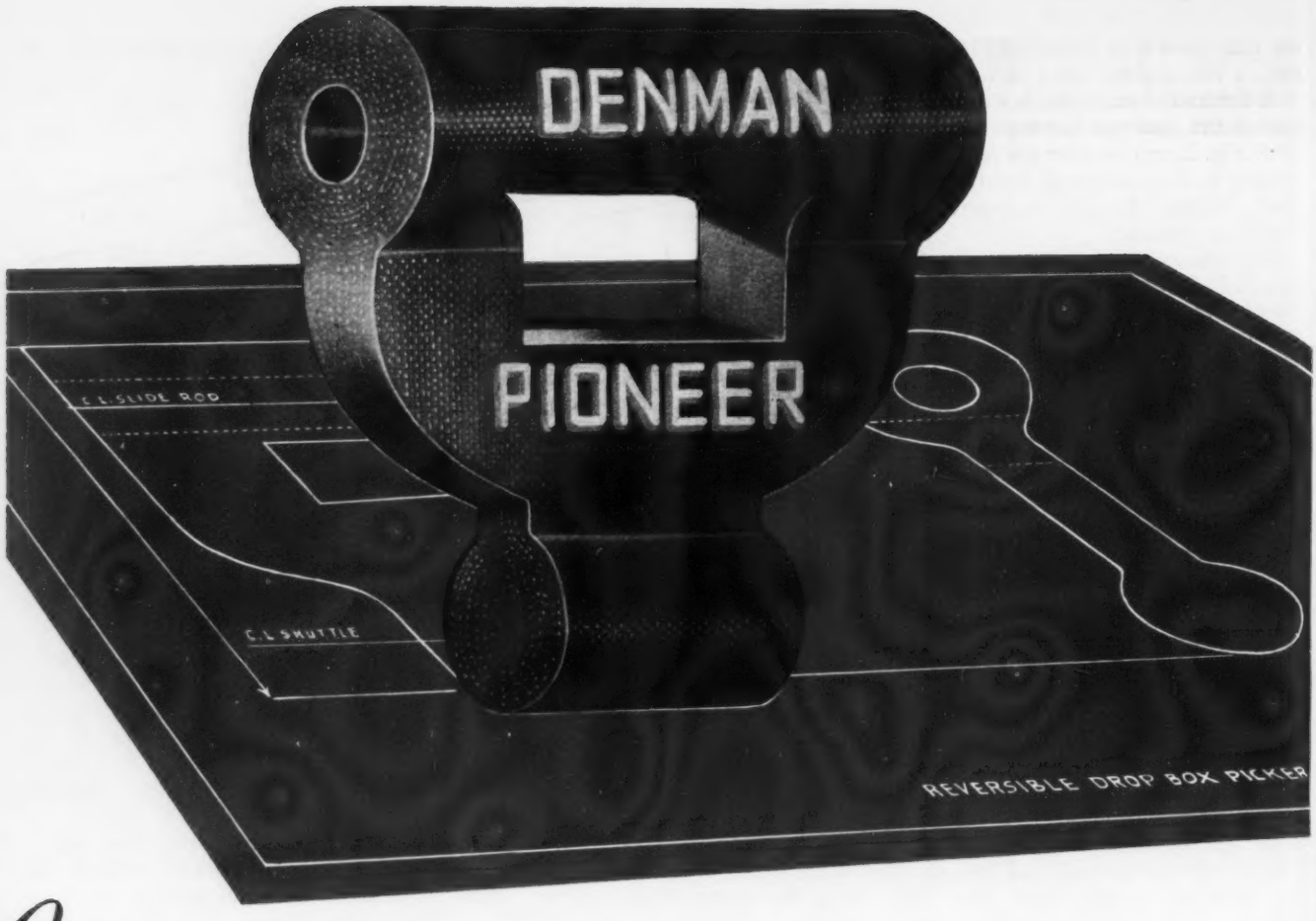
HIGHLIGHTS: Federal bill patterned after objectionable new California state law. Textile chemists' association working on test methods.

A BILL INTENDED TO BAR from interstate commerce any fabric "made from or containing any synthetic fiber which is either wholly or in part made from or contains any hazardous, explosive, or other substance in sufficient quantity so as to make such fabric or material more highly inflammable than cotton cloth in its natural state" has been introduced to Congress by California's representative J. Leroy Johnson. This bill (H.R. 2496) was probably not intended to discriminate against synthetic fibers, but it carries the implication that such fibers are particularly dangerous; and, since the "natural state" of cotton cloth is a decidedly variable quantity, the bill sets up a standard of test which is considered nothing short of hopeless. On the latter point, the question arises as to whether the base fabric should be, for example, cotton duck or lightweight cotton flannel.

The Johnson bill had its origin in a very similar state law adopted by California following, it is said, an accident at Sacramento involving brushed rayon. The California law, however, after being subjected to a heavy barrage of criticism, is being modified to refer to any garment, wearing apparel, decoration, or toy "made from or containing any cellulose-nitrate product," "made from a fabric or textile that will flash, ignite, or blaze within one minute when placed within 1 in. over an electrical element that is adjusted to generate a temperature of 400° F. at a point 1 in. above the element," or "made from synthetic fabric or textile having a pile or brushed surface, unless such fabrics or textiles have been treated with an effective flame-retarding solution and plainly marked with a warning label."

At the request of the National Retail Dry Goods Association, the American Association of Textile Chemists and Colorists has agreed to have a Sub-committee for Flammability of Consumer Textiles investigate current fire-hazard laws with reference to test methods and devise a procedure for evaluating the comparative flammabilities of cotton and other textile samples. Members of the committee are Dr. H. E. Hager, General Dyestuff, chairman; C. A. Baker, U. S. Testing, secretary; C. W. Dorn, J. C. Penney; E. N. Young, Princeton Knitting; C. L. Simon, Industrial By-Products & Research; Dr. F. Bonnet, American Viscose; and H. Wilde, Merck & Co. Assisting are A. L. Peiker, of Calco, and other members of the National Research Council.

The results of the AATCC study should prove an important basis for more intelligent legislation on textile fire hazards.



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Denman's ability to transfer this uniformity from the blueprint to the finished picker is evidenced, not by hundreds, but by hundreds of thousands of pickers . . . each one just like the one before it . . . and all conforming strictly to the ***uniform center-to-center*** specifications. For every Denman Pioneer Box Loom Picker is

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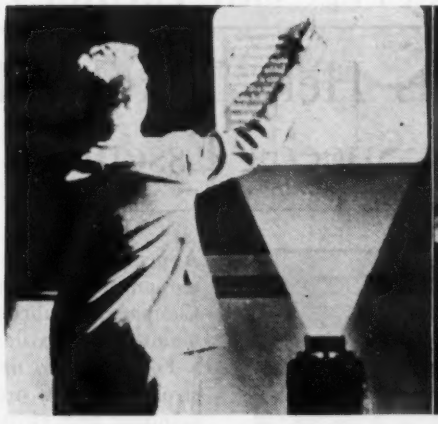
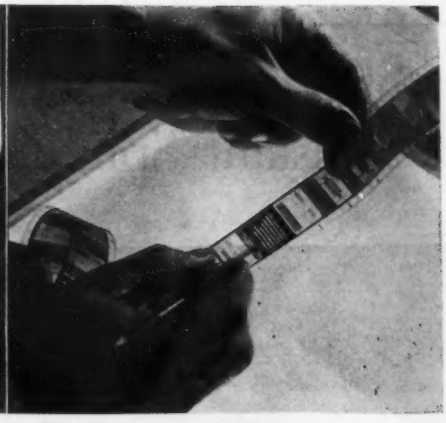
MOVIES and SLIDE FILMS Speed Textile Training

HIGHLIGHTS: Military use influences adoption in mills. First-aid and foreman-training films have been applied from other industries. Movie "King Cotton" widely used in American public schools.

By LYNE S. METCALFE



Images may be chalked on the blackboard for extended study and discussion.



Tests can be given students by blacking out portions of the film and reprojecting.

EVEN BEFORE the outbreak of the present war, many leaders in the textile industry were experimenting with the picture screen in personnel work, mainly in the field of training operatives in the mills themselves.

Motion pictures had been used on an ever-wider scale in safety education, and slide films were used to show "how it works—how to work it." Textile films are being used in the schools and colleges; one of these, "King Cotton," has become an integral part of economic studies in American public school systems.

However, the tremendous impetus given by the use of the screen in all branches of the war services has developed many new visual teaching technics which will have the result of making more and more suitable films available to the textile industry. For instance, the Eagle & Phenix Mill uses sound slide films (two in technicolor) in first-aid education—a series produced in cooperation with the Bureau of Aeronautics of the Navy. There are others. Anchor Duck Mills are using the Carnegie-Illinois Steel Co.'s slide-film series on basic foreman training. E. I. du Pont de Nemours & Co. have applied a motion picture, "Passing the Know-How Along," to the end that skilled operators may also learn the proper technics of teaching what they know to beginners. American Viscose Corp. has also incorporated foreman and supervisor training films in its personnel programs.

One of the most successful users of teaching films in the armed services is the Coast Guard whose technics for getting the most out of the visual medium will serve the textile industry in its eventually expanded training programs. A series of visual training technic courses conducted at the Jam Handy Eye School, Detroit, in cooperation with the Coast Guard, have developed some new methods of value to the industry; and others will be released from time to time.

VISUAL METHOD. For instance, users of the visual medium (especially the discussional type of slide film) have long sought some practical method to evaluate a particular subject being used and to test or examine the learners visually.* This can now be accomplished very simply. The instructor merely makes a paste of lamp-black and water and with a small art brush blacks out selected portions of the visualized material on the film on the glossy side. This is done after the lesson and its discussional phases. The slide film is then projected again and the learners are required to supply from memory the missing facts, ideas, or procedures. This has the added advantage of again bringing the visualized material before the class and of acting as a "refresher." Afterward, the instructor simply rubs off the paste with his thumb or a damp cloth. Written tests may also be added to the oral ones if desired.

View from the extremely popular sound-film "King Cotton."

Inasmuch as films are supplementary aids in all vocational teaching, new ways of integrating them more efficiently with other teaching mediums are constantly being developed. For instance, the personnel instructor may project images on a screen next to a blackboard, and elaborate on the blackboard itself the visual material beside it as he discusses the material of the film. Or, the images of charts, diagrams, or schematic drawings may be projected on the blackboard and traced in chalk, after which the lights may be turned up and further detailed study follow.

One point of great importance has been proved in the vast visual-training programs both in the armed services and in industry during the war—the tremendous advantage which intelligent discussion of visual material offers in permitting the learner to finish his or her course more quickly and with less time and labor spent by the instructor. As much as 40% of the time ordinarily required for a machine-operation course can be saved by the supplementary use of the discussional-type slide film.

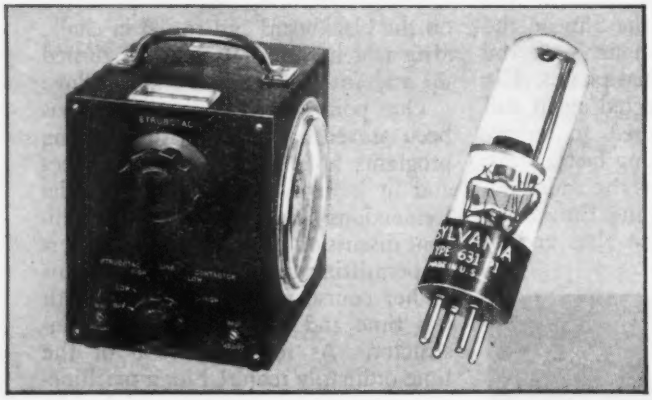
There is, of course, no substitute for actual practice at the machine. But a slide film of this type gives the beginner an over-all understanding of the machine, its purpose, and the simpler technics of the job prior to actual experience in the aisle.

SYLVANIA NEWS
TEXTILE EDITION

APRIL *Published by* SYLVANIA ELECTRIC PRODUCTS INC., *Salem, Mass.* 1945

Stroboscopic Tests Help Textile Mills to Maintain Constant Spindle Speeds Essential to Yarn Quality

The Strobotac offers a simple, rapid, accurate means of checking spindle speeds. (Courtesy General Radio.)



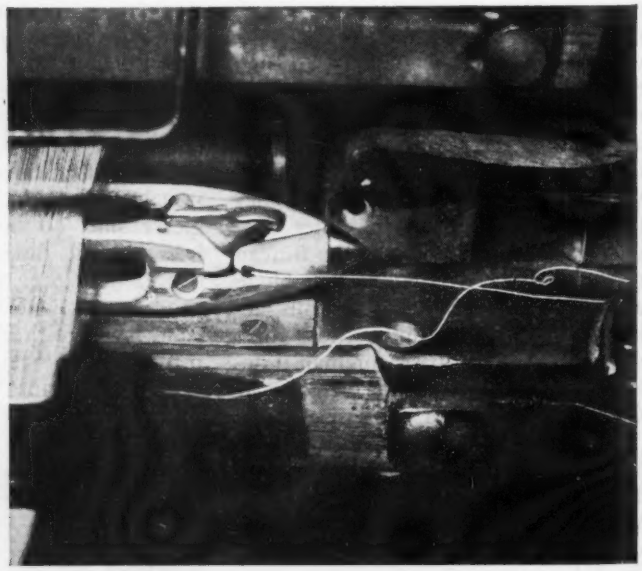
Weighing only 10 pounds, the Strobotac is a compact, self-contained portable unit. A Sylvania Electric Strobotron furnishes the light source.

Appearing to slow down—or stop—rotating or reciprocating motion, the Strobotac and Strobolux made by General Radio Company, Cambridge, Mass., are used to good advantage in maintaining textile quality and increasing production.

For example, using the Strobotac, a compact, portable stroboscope, an operator can quickly check the speeds of spinning and twisting spindles and rayon buckets. Speed variations are quickly spotted, and can be corrected before your quality is affected.

METHOD OF OPERATION

The Strobotac and its companion device, the Strobolux, used in conjunction with the Strobotac for photographic purposes or to illuminate large areas, operate by emitting flashes of light at an accurately controlled rate. Source of the light is the Strobotron Tube made by Sylvania Electric. The slow-motion analysis made possible by these devices is valuable also in training operators to adjust textile machines correctly.



Single-flash photo of loom shuttle, taken with aid of the Strobolux, shows shuttle clearance and path of yarn. (Courtesy Hoosac Mills.)

SYLVANIA ELECTRIC

MAKERS OF FLUORESCENT LAMPS, FIXTURES, ACCESSORIES; INCANDESCENT LAMPS; RADIO TUBES; CATHODE RAY TUBES; ELECTRONIC DEVICES

WPB Explains NEED FOR M-388

HIGHLIGHTS: Amendments likely, following recent hearing before Smith Committee. OPA hopeful price plan will obliterate even minor increases.

By GLADYS MONTGOMERY
Washington Editor, TEXTILE WORLD

LAST MONTH, responding to the demands of the industry, officials of the War Production Board carried to Congress their defense of the new low-end textile program, M-388. The Smith Committee listened for seven days to the pros and cons of this order and OPA's proposed Maximum Average Price Plan designed to accompany it. The net result of the hearings is expected to be a number of amendments to the order which will meet, in part at least, objections raised by the industry.

In giving reasons necessitating such a drastic program, WPB officials presented the charts reproduced herewith. They indicate heavy increases in military requirements beginning the latter part of 1944 and emphasize the need for channeling the small textile output for civilians where it is most needed. Critics of the order admitted the seriousness of the situation but disagreed with the formula adopted by WPB.

What increasing military requirements mean to the whole civilian economy was indicated by Dr. W. Y. Elliott, vice chairman, WPB, Office of Civilian Requirements, as follows:

First, as a result of cotton-duck demands, civilians are reduced to 25% of the minimum requirements for denims for working men's clothing. In cotton print cloths (suitable for garments), which cover most of the cotton broad woven type of goods, civilians have not more than 50% of minimum requirements, as against 70% last year. Dr. Elliott stated that in the combed-goods field, due to military needs, "we are without the quality type of goods for higher-class merchandise that we need to produce if we are not to disrupt whole sections of the industry seriously."

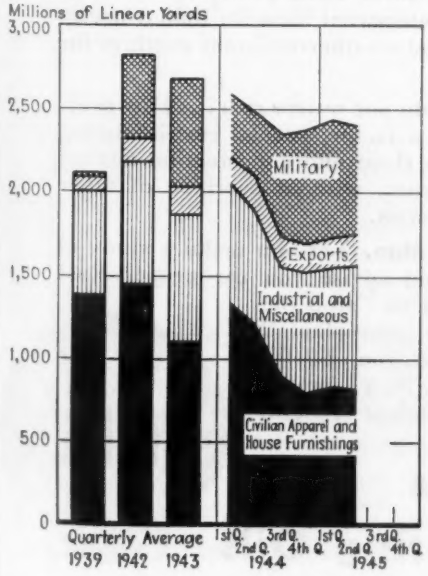
Secondly, the rayon supply for civilians is probably around 80% of normal consumption, which makes a much less serious problem. However, rayon, which accounts for only about a third of the yardage for garments that cotton does, has to substitute for cotton in certain apparel and at considerably higher prices.

Third, in the wool field on a basis of minimum requirements, Dr. Elliott estimates we have only 8% of production left for civilian use. He told the Smith Committee that the Army is taking approximately 75% of the total output of wool fabrics.

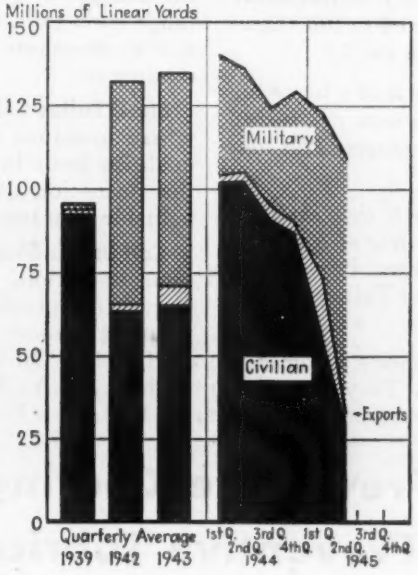
Fourth, percentages of products being exported total roughly 1 to 2% of wool; somewhere between 8 and 10% of the total supply, including military, of cotton; and less than 4% of rayon. Dr. Elliott emphasized that this whole picture could be changed rapidly with expanding relief needs.

After WPB officials had pictured the shortages of civilian goods and defended order M-388 against criticisms from industry representatives and from members of the Smith Committee, OPA officials explained how the maximum average price plan ties in with M-388. Jerome N. Ney, director of the Consumer Goods Price Division, OPA, stated that the order "will remove even the moderate price increases which have occurred in rayon and wool fabrics in the last few years (except to the extent that a reduction would clearly interfere with production)."

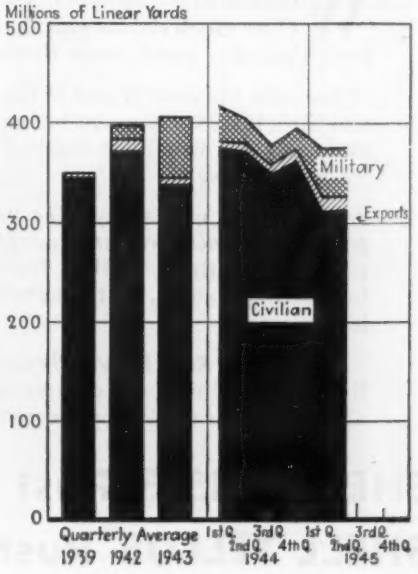
Cotton Broad Woven Fabrics Production and Distribution



Wool Woven Fabrics Production and Distribution



Rayon Broad Woven Fabrics Production and Distribution



Stop that thieving demon *RUST* with new

SHELL RUST-PREVENTIVES

WHAT IS RUST'S annual "cut" in your business? How much should you charge off to this thievery? Probably much more than you think!

Because the cost of rust is the total of a lot of big and little losses. Depreciating equipment . . . ruined materials . . . worthless finished products. *Plus time wasted all along the line!*

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Shell Ensis Rust Preventives embody a complete line of oils, fluids and compounds. They are available in various grades and provide protection against the dangers of exposure. Their protective coatings range from thin, transparent films for indoor use to heavy, abrasion- and weather-resistant coatings for outdoors.

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SHELL TELLUS Rust Preventive Lubricating Oils

TEXTILE Equipment NEWS

LOOM ATTACHMENTS Include Brace, Whiproll Rocker, and Harness Motion

To make old looms steadier and permit smooth operation at higher speeds, a patented spreader or brace and an improved flywheel drive have been developed by the Mountain City Foundry & Machine Co., Greenville, S. C. A new harness motion, whiproll vibrator arm, and support for the motor or pulley frame are also manufactured by this company.

A number of mills experimenting with spreader and flywheel drive have reported speed increases of 7½ to 18% on E-Model looms by the use of the spreader, and more even application of power to the looms by the use of the flywheel pulley. Mill men interviewed, while interested in increasing speeds of old looms, reported that they were equally interested in gaining production through a steadier, more smoothly operating machine and a reduction in seconds, supplies, and repairs.

LOOM SPREADER. The term "spreader," according to John O. Hunt, designer and manufacturer of the attachment, is borrowed from the construction industry. It implies a beam or brace extending or spreading between two other structural units. Actually, the loom spreader is a cast-iron beam extending between the loomsides, to which it is bolted and pinned to form a firm loom structure. As shown in Fig. 1, it extends across the loom just below the crankshaft and serves not only as a brace but also as a bed for additional crankshaft bearings, which help further to reduce vibration. In addition, two vertical members extend from the spreader beam to the bottom crossgirts and support two bearings for the loom camshaft.

Spreaders can be designed for any loom and installed in about a day without overhauling of the looms. Some mills prefer to overhaul their looms and install the spreader themselves.

FLYWHEEL DRIVE. The new flywheel drive, Fig. 2, is being tried out on looms with or without spreaders and was designed primarily to replace tight-and-loose-pulley drives. The assembly consists of a single, heavy, flywheel pulley which runs on the crankshaft, a cork-insert friction disk which operates against it and is keyed to the crankshaft, and a shipper lever to operate the clutch. The clutch is similar to that on an individual-motor-driven loom. Ball thrust-bearings placed between the friction disk and crankshaft bearing, and between the shipper-yoke housing and the flywheel pulley, take up the thrust when the

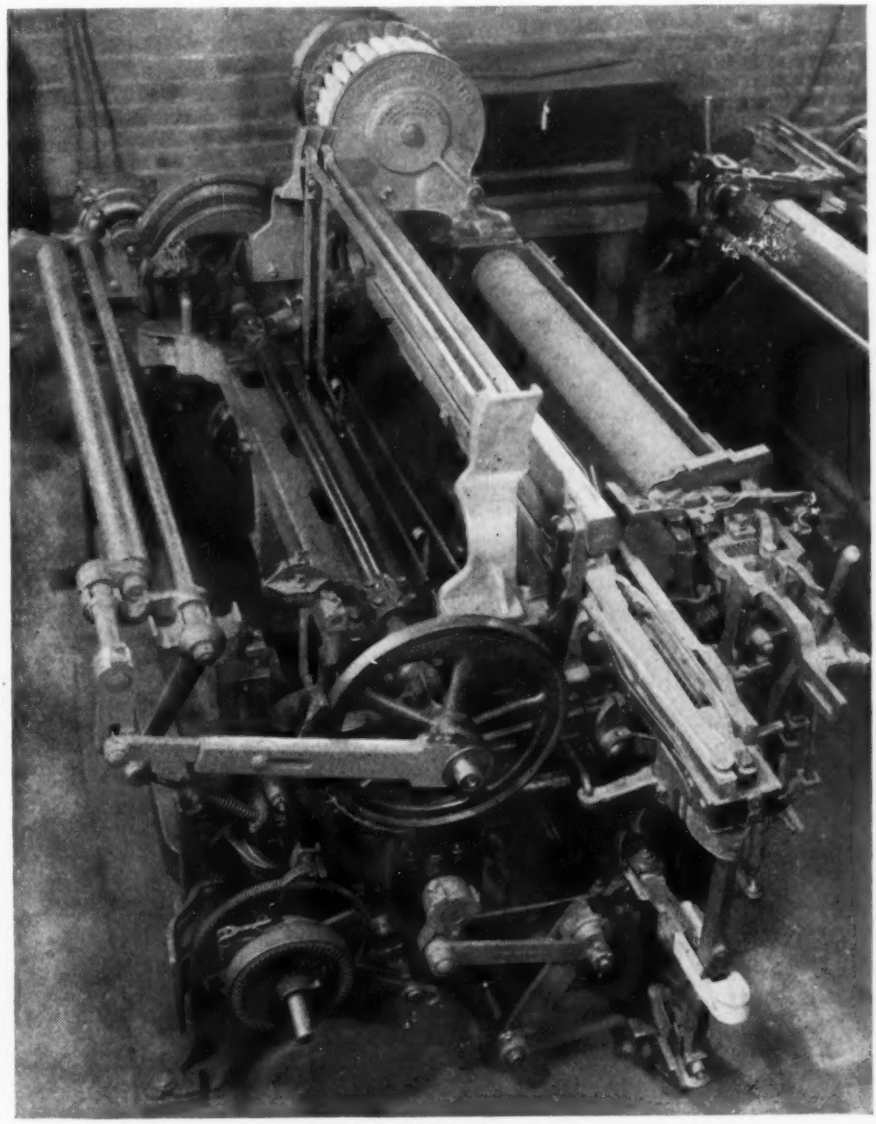


Fig. 1. Spreader beam is located just below crankshaft. Part of one of the vertical members can be seen below it. Also visible are new whiproll vibrator and parts of the novel harness motion (Mountain City)

clutch is closed and keep the crankshaft from wearing and being pushed out of line with the pitman arm. Some experiments are still being made to improve the clutch.

It is primarily in the use of a friction clutch rather than a cone clutch that the new drive differs from previous drives of this type. Damage to the loom on slamming is avoided, it is reported, because the clutch releases instantaneously.

MILL EXPERIENCE. One mill visited had 20 40-in. looms with the spreader and flywheel drive and 30 without the spreader that were operated as one weaver's stand. The looms with the spreader were run at 172 p.p.m.; and the looms without the spreader, at 158 p.p.m. Repairs, supplies, parts, and lubricants were estimated on the basis of picks to be about the same on both. Production efficiencies reported by weeks on each group of looms were as follows:

	With Spreader *172 p.p.m.	*Without Spreader* 158 p.p.m.
1st wk.....	96.0%	92.8%
2nd wk.....	88.8%	86.9%
3rd wk.....	97.5%	89.2%
Av.	94.1%	89.6%

* Note: Efficiency was figured on the basis of total picks in 48 hr. made against old loom speed of 158 p.p.m.

The gain was estimated to be 3,413 picks per loom, or a total gain for 20 looms of 68,260 picks for 8 hr. On a 40x44 construction, this would be a gain of 43 yd. in 8 hr.

Before the spreader and flywheel drive were installed, this mill found it impossible to make full feeler goods on its old belt-driven looms because it could not keep shuttles boxed properly on every pick. With the spreader and flywheel drive, cloth quality is improved.

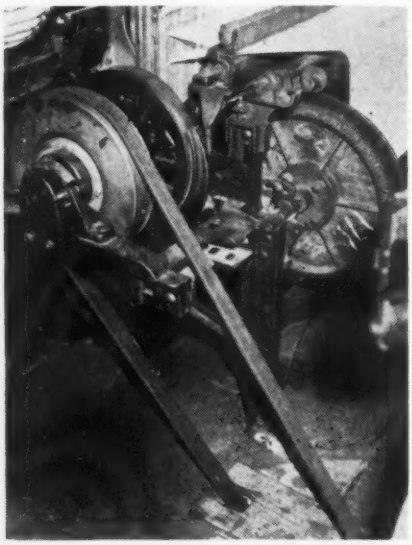


Fig. 2. The flywheel drive with friction clutch is designed to give quick application and release of power (Mountain City)

Another mill has about 600 looms equipped with spreaders and is operating on 24-pick goods at 10% increase in loom speed, having gone from 163 to 180 p.p.m.

Belton Mills, Belton, S. C., have 72 44-in. E-Model looms with the spreader running at 164 p.p.m. as compared with 152 p.p.m. for 44-in. looms without the spreader, although the installation was primarily intended to provide a stronger loom for producing a better piece of goods and to reduce breakage of parts from vibration.

Dacotah Cotton Mills, Inc., Lexington, N. C., have equipped about 112 44-in. and 130 40-in. E.Model looms with these attachments. The 44-in. looms are run at 168 p.p.m., as against 150 p.p.m. before the remodeling. The 40-in. looms are still operated at the old speed of 160 p.p.m., except for ten looms running at 184 p.p.m.

Wennonah Cotton Mills Co., of Lexington, N. C., has adopted the spreader and flywheel drive on 20 looms now running at 184 p.p.m. This mill is experimenting with the use of these devices on 46½-in. C&K looms.

HARNESS MOTION. The new harness motion is not only driven positively in both up and down directions, but moves the harnesses in an arc concentric with the fell of the cloth in order to avoid slubs, knots, and other parts of the yarn from passing unnecessarily backward and forward through the heddle eyes. The heddle frames are held firmly in larger frames which are permanently mounted on levers actuated from the camshaft through the special linkage shown light-colored in the lower part of Fig. 1. As may be seen in the same photograph, the upper corners of the large frames bear rollers which move in slots in the harness brackets. These slots are curved to conform to the movements of the levers below and thus help to give the harnesses their arc-like movement. The two sheds formed by each revolution of the camshaft are equalized by a compensating slot in the linkage, and similar provision is also made for dwell of the harnesses.

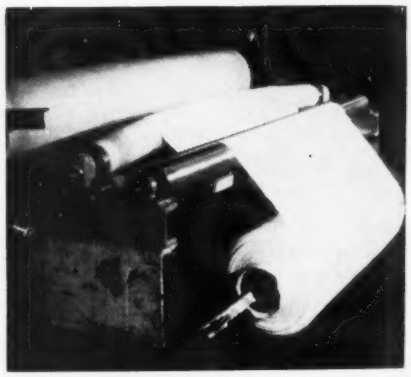
The chief advantages of this new harness motion are said to lie in reduction of warp abrasion; in elimination of harness whip, which is especially helpful on weak or slubby yarns; and in the absence of straps requiring adjustment and replacement.

WHIPROLL ROCKER. The new whip roll rocker arm, Fig. 1, designed to operate from an internal cam on the crankshaft, is said to impart positive motion to the whiproll that can be controlled more closely.

DRIVE SUPPORT. The motor stand or pulley-frame support, Fig. 2, consists of cast-iron brackets that are bolted to the motor stand or pulley frame and loomside rather than to the floor. These brackets allow the loom drive to move with, rather than against, the loom, thus removing the strain on the crankshaft and head gears.

Ball Bearing Mounted Cloth Expander

A cloth expander, recently announced by Mount Hope Machinery Co., Taunton, Mass., meets the need for a device which will produce maximum width with minimum warp tension (and without undue wear on the surface of the expander) in the finishing or coating of fabrics. A single expander located in front of the nips of mangles, calenders, washers, etc., will protect the cloth from creases which might be squeezed into it. A special expander has proved most effective for rolling up rayon or cotton tire cord without wrinkles.

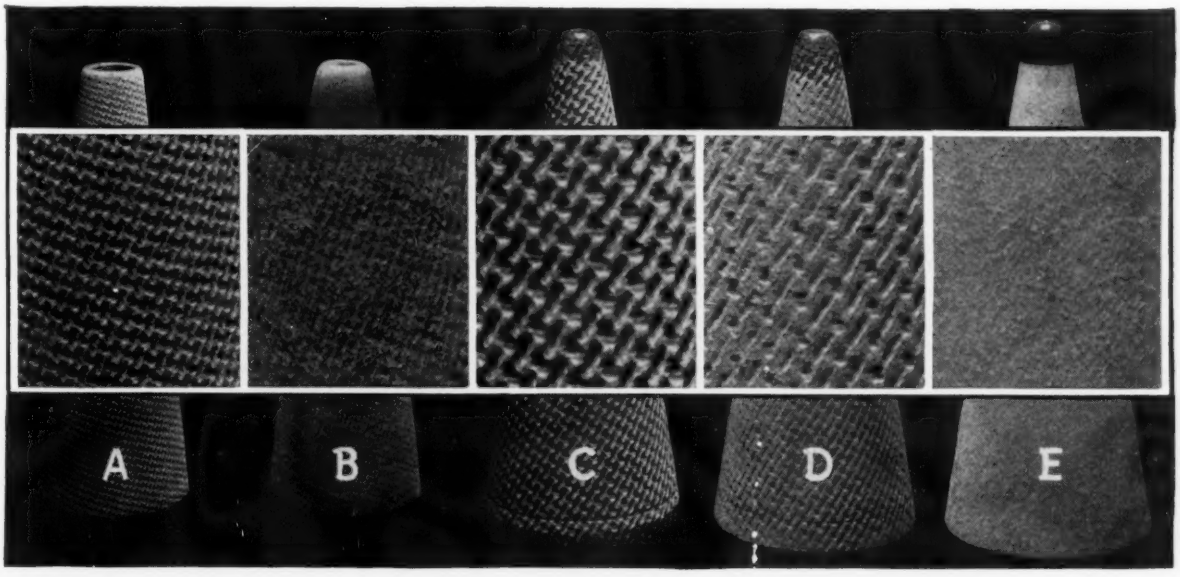


A Neoprene-covered ball-bearing expander for stretching fabrics in finishing or in coating (Mount Hope)

The roll is Neoprene-covered and ball-bearing mounted. It is free turning and can be used for expanding rayon marquisette without putting too much tension on the warp; and, as many as six expanders at one time have been used on cotton marquisette in front of a stack of dry cans, thus producing exceptional crosswise stretch.

The unit is mounted on a hexagonal axle, 1⅞-in. between flats, which is bent to any desired curve and supported at its ends by ingenious ball-

More than meets the eye in Coning Cotton and Rayon Yarns



The surface of a cone can have everything to do with winding a perfect package or—effecting delivery of yarn. SONOCO has perfected a wide range, from coarse, to velvet, to polished surfaces, in all weights, tapers, and nose finishes. A few examples: A. Regular low mark corrugated surface—12-E cone 5° 57′ taper—straight nose. B. Same cone with Velvet Surface—open round nose. C. High mark corrugated surface—9° 15′ taper—open round nose. D. Same cone as "C" given velvet surfacing. E. 9° 15′ cone made with unmarked paper and given a ground velvet surface. Open round nose—lacquer tip.

A simple rule for cone surfaces is: Use regular surfaces on cotton yarn counts from 4s to 40s. Velvet Surfaces on yarn counts from 40s to 120s. However, wide deviations are practical as shown by experience. SONOCO'S Technical Service Experts are available to help solve specific problems.

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SAVE
WASTE PAPER

ARMY E NAVY

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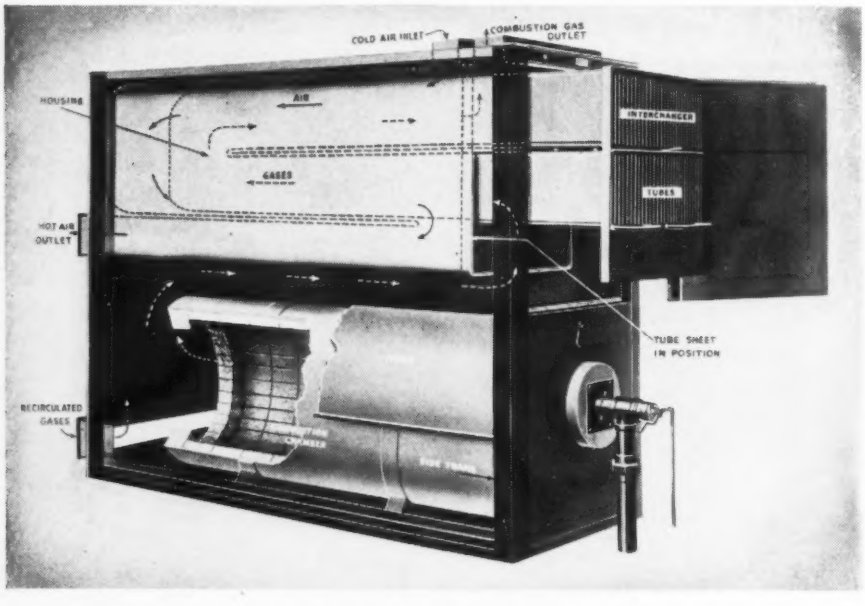
and-socket clamps consisting of bronze jaws held in heavy cast-iron brackets. These brackets permit the expander to be set at any desired angle to the cloth; the axle is secured in position with two $\frac{5}{8}$-in. setscrews in each bracket.

The inner races of the ball bearings have hexagonal holes, so that they cannot turn on the axle or stick and cut it. The ball bearings and sleeve are held securely together by two collars with setscrews securely spotted into the axle, while the rubber covering is located and held by two bronze end-castings. The rubber thickness is $\frac{1}{2}$-in. and its outside diameter is $4\frac{1}{4}$-in. Patents are pending. The manufacturers plan to carry 50-in. expanders in stock.

Recirculating Air Heater

An indirect heater, suitable for use with industrial ovens used for drying coated fabrics, and one which keeps the products of combustion separate from the air being heated has been announced by J. O. Ross Engineering Corp., 350 Madison Ave., New York 17, N. Y. Products of combustion in this heater are recirculated so as to obtain a fuel efficiency of 85%.

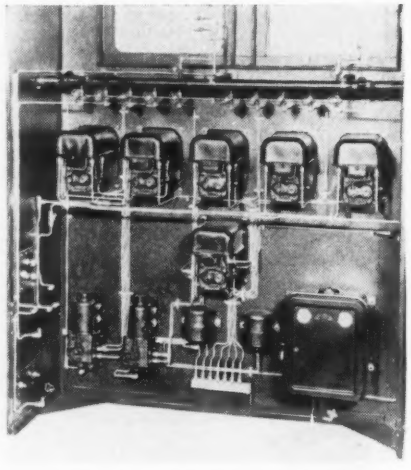
A steel interchanger is located over the combustion chamber. The air to be heated passes along the outside of the tubes and the combustion gases pass through the tubes. Maximum air delivery temperature ranges from 500 to 600° F. Two sizes of this heater are being built, one of 750,000 B.t.u. per hr. output and the other of 1,000,000 B.t.u. per hr. output. The heater may be designed for operation on gas or on oil.



Arrangement of parts in recirculating indirect air heater (Ross)

Prefabricated Boiler Control Panel

Prefabricated boiler control panels, which include all necessary connecting piping and electrical wiring for the operation of metering equipment and boiler-control systems, are now offered by Bailey Meter Co., Cleveland 10, Ohio, to simplify the user's problem of installation. These panels, which are factory fabricated and tested are



Installation time of boiler-control instruments reduced by prefabricated control panels (Bailey)

said to save installation time, to insure the use of suitable materials, to reduce total installed cost, and to present a neat, pleasing appearance. All piping and wiring necessary for operation is installed as a unit, instead of piecemeal by various contractors in the field.

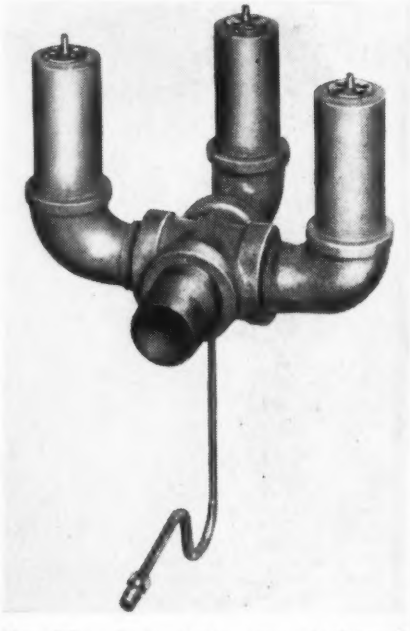
Small units such as valves, relays, switches, signal lights, and sturdy light-weight instruments are mounted and connected ready for service. Heavy instruments or instruments having delicate mechanisms are shipped separately; but cut-out spaces, drilling and all necessary connections are provided so that their installation in the field is a quick and easy operation.

Connecting piping and electrical wiring are brought to convenient terminals which are carefully tagged, so that no time or effort is lost in connecting the prefabricated boiler control panel to the various factors which it controls.

Cluster-Type Humidifier

A humidifier, known as the Skilbeck cluster-type humidifier, has been developed by Techtman Industries, 828 North Broadway, Milwaukee 2, Wis., for humidifying large industrial spaces.

The humidifier is available in multiples ranging from two to sixteen Skilbeck E-120 humidifiers, with a capacity range from approximately 240 gal. to 1,820 gal. per 24-hr. period, taking care of areas from 80,000 to 640,000 cu. ft. of inclosure. The units operate on pressures ranging from 1 to 20 lb.



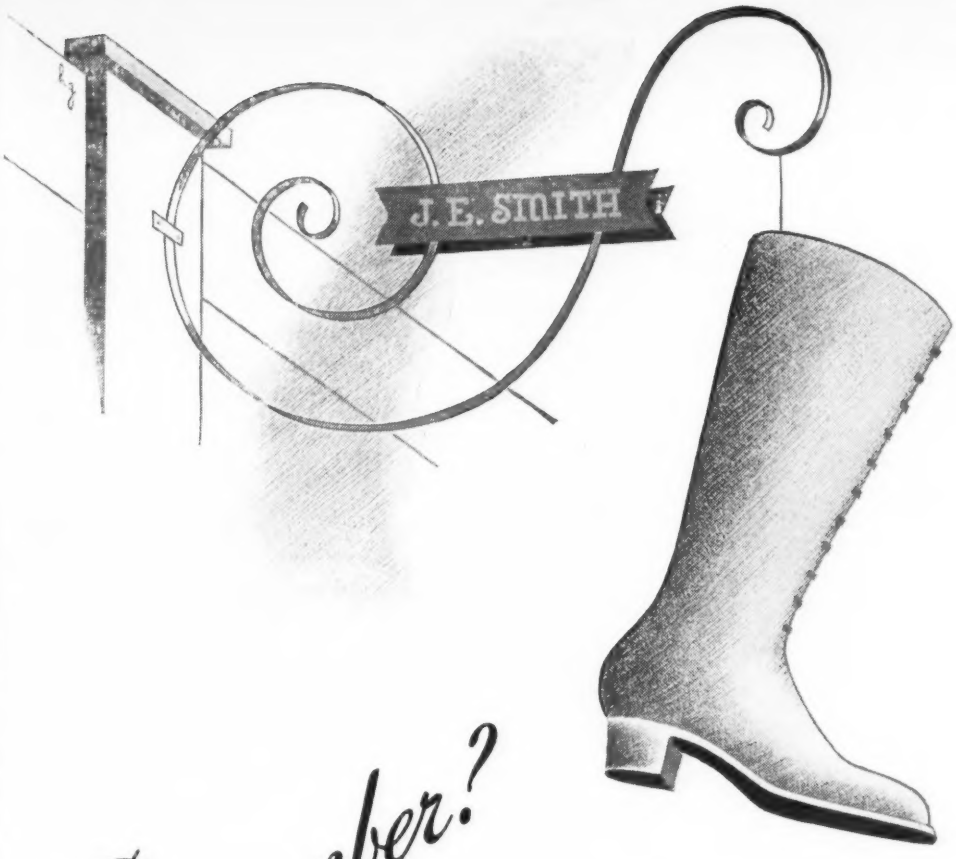
Humidifier of the cluster type (Techtmann)

New Variable Speed Drive

A variable speed drive, suitable for heavy-duty work where speed control is required for motors ranging from 3 to 40 hp. and even greater, has been announced by Lombard Governor Corp., Ashland, Mass.

Already proved on heavy conveyors, high-speed blower, refrigerator, and

(Continued on page 204)



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Unmistakable . . . obvious . . . effective . . . cobblers began using this sign to excite trade when most people were illiterate. It was their trademark for centuries.

The trademark or name on your product is the keystone upon which your business is built. Its adequate presentation is important. Important for protecting your name, for sales appeal, for customer acceptance. Kaumagraph* Dry Transfers, Prestomarks, Embossed Seals, Lithography, Boxwraps and Labels will carry your name and informative markings with distinction, will build business. Many new products and methods of identification developed by Kaumagraph for war, are available now — others when hostilities cease.

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Dyes & Chemicals — PRODUCTS & PROCESSES

Dark Wool Colors

CALCOMET DYES; Calco Chemical Division, American Cyanamid Co., Bound Brook, N. J.

A new series of wool colors which make it possible to produce by the improved meta-chrome process full, heavy shades on woolens has just been announced. For the first time, it is said, heavy shades, which formerly were produced only by the top or bottom chrome methods, can now be made by the meta-chrome method.

This series of colors are reported to level well with good penetration throughout the fibers on blends of various wools. It is said to be possible to obtain a full, jet black among the other deep shades, with the same ease as it is to dye light or medium shades.

Fireproof Coating

CHLORINATED ISOPOL; Union Bay State Chemical Co., Cambridge, Mass.

Chlorinated Isopol, the company states, is a new synthetic that is practically identical to chlorinated rubber in flame resistance, moisture resistance, chemical resistance, solubility, and stability. It is said to offer interesting possibilities as an acid and alkali-resistant coating on metal, concrete, and other surfaces.

If applied to fabrics, it is said to impart fire and moisture-proof properties to them.

Flexible Pitch

ALLIED G-1; Allied Asphalt & Mineral Corp., 217 Broadway, New York 7, N. Y.

This product is offered for use in conjunction with various resins as an impregnating material for canvas, duck, and other fabrics to impart flameproof and waterproof properties. It has a melting point by the ball-and-ring method of 180° to 200° F., and a penetration at 77° F. of 40-60 by the needle-penetration method.

Due to its flame-resistant and waterproof properties, it is being used quite extensively by manufacturers of compounds that are being used in preparing tents and other materials for the government. It has excellent adhesive properties as well as resistance to moisture and dampness, and it does not have a tendency to bleed. It can be used both as an impregnating agent and a laminating material.

It is a pliable, non-tacky, rubbery pitch, blended from selected pitches and processed to give a maximum of flexibility over a range of temperatures from zero to 160° F., yet melts and pours readily at 400° to 450° F. G-1 is compatible with various resins and oils which are being used at the present time, and can be used at low temperatures without cracking or breaking. It has been found that an addition of 10 to 25% of ethyl cellulose of the N-100 type increases the melting point and reduces the penetration.

Mill Maintenance — TO KEEP 'EM RUNNING

Installation and Maintenance of Air Traps

	NOTES ON AIR TRAP INSTALLATION AND MAINTENANCE	Inverted Bucket Traps	Ball Float Traps	Snap-Action Ball Float Traps
1.	Install below and close to line of unit to be drained.	√	√	√
2.	Install in position accessible for maintenance.	√	√	√
3.	Blow out line at full pressure before installing trap.	√	√	√
4.	Fill trap body with water before turning on air. (After initial installation and after cleaning)	√		
5.	Clean out trap interior thoroughly at regular intervals.	√	√	√
6.	Install bucket vent scrubber or enlarge vent where oil conditions are so severe as to plug vent.	√		
7.	Do not lift float higher than necessary to make valve snap open.			√
8.	Install blowdown valve where dirt conditions are severe.		√	√
9.	Be sure trap is installed right side up for draining water.	√	√	√
10.	Invert trap for venting air.		√	
11.	Select proper trap for operating conditions:			
	A. For severe dirt and oil.	√		
	B. For normal or relatively dirty conditions.			√
	C. For clean conditions.		√	

Correct operation of air traps is essential if operating efficiency of textile processing equipment requiring steam is to be maintained. The accompanying table lists various points which must be given careful consideration, according to an article appearing in a recent issue of *Armstrong Trap Magazine*, published by Armstrong Machine Works.

BARNES USES ONLY

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FOR

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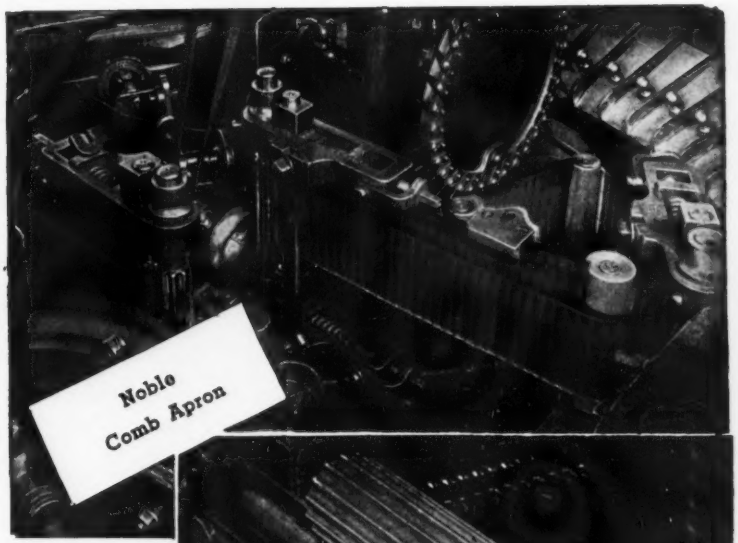

Barnes buys the right leather, gives it the right processing. Our apron leather is tanned from finest Foreign and Premium Domestic Steer Hides in our own tannery.

Barnes aprons are hand processed throughout and are thoroughly seasoned before shipping. They are of even thickness throughout, have minimum stretch, run straight, and have waterproof laps which are strong, flexible and of even thickness overall. They have above all, exactly THE CORRECT SURFACE to grip the wool fibres *gently* and carry it forward in just the manner to assure a properly made yarn. Even using the *best leathers* won't insure this special surface finish. THAT is the result of the many years that Barnes has spent on research and close experience with worsted problems.

BARNES PRODUCTS
MADE FROM SELECTED HIDES

Aprons for Combing, Preparing, Finishing and Drawing FRENCH AND BRADFORD SYSTEMS

Chrome—Brown—Special Tan

Plain and Hair-On Loom Strapping

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First-Quality Center Stock

Prestretched and Manufactured for Each Drive Condition

Available in All Tannages

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SINCE 1876

Where unusual knowledge of Leather is combined with long years of Textile experience
APRONS—BELTING • FLAT • ROUND • & ACCESSORIES—STRAPPING

Kinks AND SHORT-CUTS

A $25 WAR BOND FOR YOUR IDEA

A $25 War Bond will be awarded each month for the most useful "kink" published in this department. This contest is open to all readers of TEXTILE WORLD, and there is no limit to the number of entries any one person may make.

Contributions must be received not later than the last day of the month to be eligible for the award for the second succeeding month. Items may pertain to production methods, mill engineering, safety, cutting costs, improving quality, speeding up production; in brief, any little device, stunt, kink, or short-cut which you have tried out in your own mill and which you believe will be helpful to other mill men. Items should contain sufficient detail to permit other mill men to utilize the ideas in their own operations. Previously published material is not eligible for the award. Judges of the contest are the editors of TEXTILE WORLD.

TEXTILE WORLD shall have the right to publish any items submitted. Items which are accepted will be paid for at our regular rate for this type of matter with extra payment for appropriate sketches or photographs. The sketch you submit need not be a finished drawing.

In writing to this department, give your real name and address as evidence of good faith and to permit payment for items accepted. Please advise whether your name may be used with the kink.

Contributions should be addressed to: Technical Editor, TEXTILE WORLD, 330 Wet 42nd St., New York 18, N. Y.

★ WAR BOND PRIZE WINNER FOR APRIL

(February Contest)

Compensator Rod Prevents Knock-Offs

Since the installation of our Whitin automatic filling winders, we have experienced difficulty with the units stopping off while doffing, due to the lack of tension on the yarn which allows the compensator to fall back and stop off the unit.

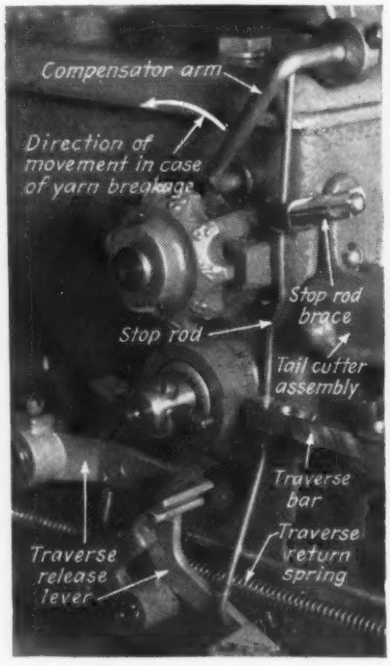
To eliminate this condition, I perfected the device shown in the accompanying photographs and drawing.

This device utilizes the lift of the traverse release lever to thrust a small rod upward behind the horizontal part of the compensator arm at the instant the doffing operation begins, and continues to hold the compensator until doffing is complete. As the release lever is lowered, the rod holding the compensator is retracted and allows the compensator to resume its normal function.

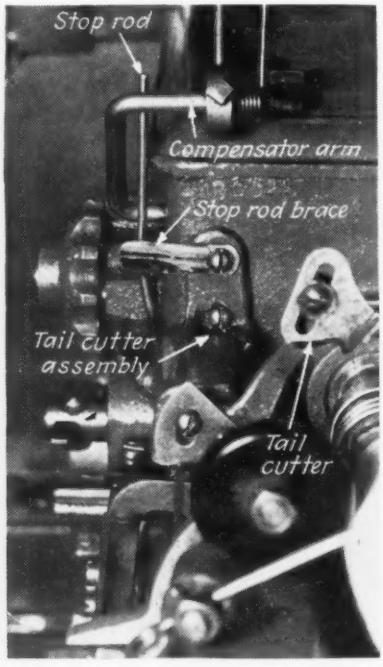
To make and assemble this device, first disassemble the traverse release lever. Then, approximately $\frac{1}{16}$ in. from the lift end, drill a $\frac{5}{32}$-in. hole. A length of $\frac{1}{8}$-in. rod is bent to form a hook and is inserted in the hole drilled in the release lever. The rod must be fashioned to clear the other working parts. The shape of the rod can easily be determined by first making a sample, a bend at a time, until correct. Other rods can then be made over the sample.

Bear in mind that the rod must not touch either the pickwheel or the traverse bar and must move

(Continued on page 160)



SIDE VIEW
Stop rod in running position



FRONT VIEW
Stop rod in doffing or stop position

Text calls for stop rod to be 1/16-in. higher than the compensator arm, but, in the front view above, the rod appears still higher. This was done purposely for the sake of clarity.

Millions of Pounds

In training areas throughout the Nation . . . on many battle-fronts . . . outposts . . . ships at sea . . . Dixie Durene is being universally used. Millions of pounds of Dixie Durene are made into products for the Army, Navy and Marines, all over the world!

Our Armed Forces are the best clothed, best equipped in history. Dixie Durene—a product of "Controlled Manufacture"—always meets quality standards when mercerized yarn is specified for articles of War.

• • •

And so there's little Dixie Durene left for civilian needs. Meanwhile, we ask your indulgence—and hope you are planning to use Dixie Durene in *your* post-war production.

Dixie Durene

A PRODUCT OF CONTROLLED MANUFACTURE

Dixie Mercerizing Company, Chattanooga 1, Tennessee

KINKS & SHORT-CUTS
(Continued from page 158)

freely. Be sure that the rod is of sufficient length, and do not attempt to cut it off until assembled to the unit.

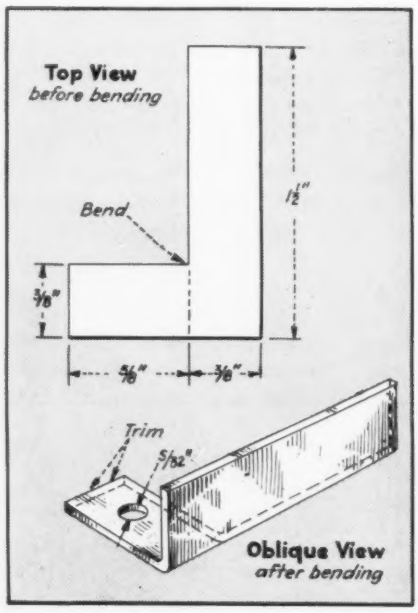
To fasten to the release lever, use a $\frac{1}{8}$-in. plate washer soldered to the end of the hook which projects through the hole in the release lever, and round it off smooth. There should be no more than $\frac{3}{32}$ in. projecting beyond the release lever as more will interfere with the traverse return spring.

Thread the rod up behind the compensator arm and place the release lever on the stud in running position. After fastening the lever in place, set the unit in doffing position, and make sure that the release lever is on the high part of the cam. This will bring the rod up to its full height. The rod can now be cut off approximately $\frac{1}{16}$ in. higher than the compensator arm and should be positioned about $\frac{1}{16}$ in. behind the arm.

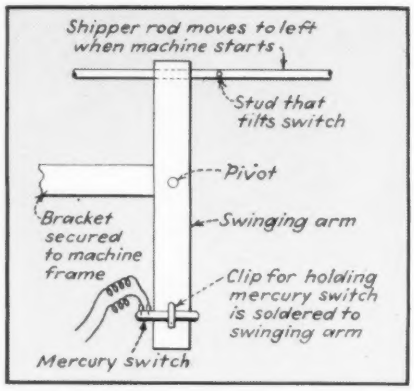
Now to make a stop-rod brace, use a piece of material $\frac{1}{16}$-in. thick. (Material from an old switch box will do very well for this purpose.) Cut a piece in an *L* shape, $\frac{3}{8}$-in. wide (see drawing). The long part of the *L* should be approximately $1\frac{1}{2}$ in. long and the short part should be $\frac{5}{8}$ in. long, The piece is then bent as shown in the drawing.

A $\frac{5}{32}$-in. hole is drilled in the short part, and the hole in the long part is drilled to the size of the screw in the tail-cutter assembly. These holes must, of course, be positioned according to the individual unit; as they, most likely, are not identical on all models.

This completes the device which will give trouble-free service if correctly positioned. *(K-307)* *Alfred King, Altoona, Pa.*



Rod-stop brace is made from 1/16-in. material, cut and bent as shown above.


Shipper rod moves to left when machine starts
Stud that tilts switch
Pivot
Bracket secured to machine frame
Swinging arm
Clip for holding mercury switch is soldered to swinging arm
Mercury switch

Stud on shipper handle tilts the mercury switch.

Mercury Switch Cures Many Contact Troubles

The adjoining sketch shows a method of mounting a mercury-tube switch on a swinging arm in such a manner that a bolt or stud on the belt shipper rod or starting arm tilts the mercury tube, thereby closing the electric circuit when the belt is shifted to the tight pulley.

The mercury-tube switch replaces the rather crude and unsatisfactory sliding or wiping contacts in general use on otherwise satisfactory stop-motion or drop-wire circuits—for example, on inspection spoolers or warpers. It eliminates the difficulties caused by these sliding contacts when they become covered with oil, dirt, or lint, as is frequently the case. The mercury-tube switch is entirely enclosed and is almost impervious to these conditions. Being very simple, it has very long life.

With a little ingenuity, the mercury-tube mounting can be adapted to almost any type of starting handle.

The bracket and swinging arm can be made from whatever flat stock is available; I used 1x$\frac{1}{4}$-in. flat iron. *(K-312)*

Knit Cloth Removed By Power Machine

In many circular piece goods knitting mills much of a knitter's time is taken up with pulling cloth out of the cans under the machines. This job, plus marking the cloth, often takes as much as ten minutes time per piece.

To save the knitter's time, a boy can be put on this job, but best of all is to use a portable power machine which can be made up in any good shop.

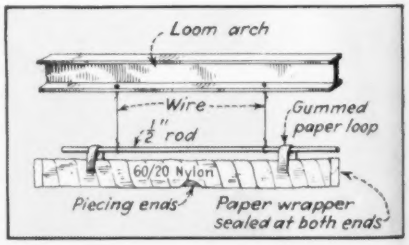
This machine can also be used for turning the cloth, if necessary, as it can be made from an old-fashioned turning tube by applying power. The boy who runs it can also mark up facts like the weight, size, knitter's number, yarn, date, and any special marks.

I have found that such a machine, powered with a 110-volt $\frac{1}{4}$-h.p. motor, can take care of 80 machines and can cut the time to 2 fifths of that required to pull out the cloth by hand. *(K-302)*

Sealed Wrappers Keep Piecing Ends Clean

Piecing ends on looms are usually torn from bobbins on a rod in back of the loom or from a mass of ends hung on the loom arch. In both cases, the yarn not only is likely to become soiled, but also often cannot be identified as the same as the warp with which it is being used.

In our mill, we completely wrap a group of piecing ends about 30 in. long. Then we label the wrapper and put two gummed-paper loops on it. On our looms, we have mounted a long rod which slips into the loops as shown in the illustration. A small hole is cut in the bottom of the wrapper and from it piecing ends are withdrawn as needed—meanwhile they stay clean and correctly identified! *(K-267)*



To mount piecing ends, slip rod into loops.

Pipe With Wooden Plug Used as Cleaner Holder

We find that the pipe cleaners which we use to help keep our woolen spinning frames clean become scattered everywhere, unless definite provisions are made to accommodate them. For this purpose, we make a simple holder from a piece of $1\frac{1}{2}$-in. pipe $5\frac{1}{2}$-in. long with a wooden plug in one end.

Such a holder can be bolted any-

AMERICAN MONORAIL Automatic MONITOR CLEANER

Monitor cleaning is now done automatically by a high velocity fan unit that travels around a MonoRail loop within the monitor. At regular intervals, a blast of air is diffused in all directions, preventing lint accumulation within the monitor. Other advantages that result in considerable savings are—it improves the quality of yarn processed beneath monitor—it eliminates danger of accident with hand cleaners—it assures full production during cleaning—it tends to distribute humidity evenly over work below—in short it shows an annual saving in cleaning cost—plus an increase in production due to continuous operation of machines below.

An American MonoRail Engineer will gladly explain further details.

Write for copy of booklet describing American MonoRail Monitor Cleaning.

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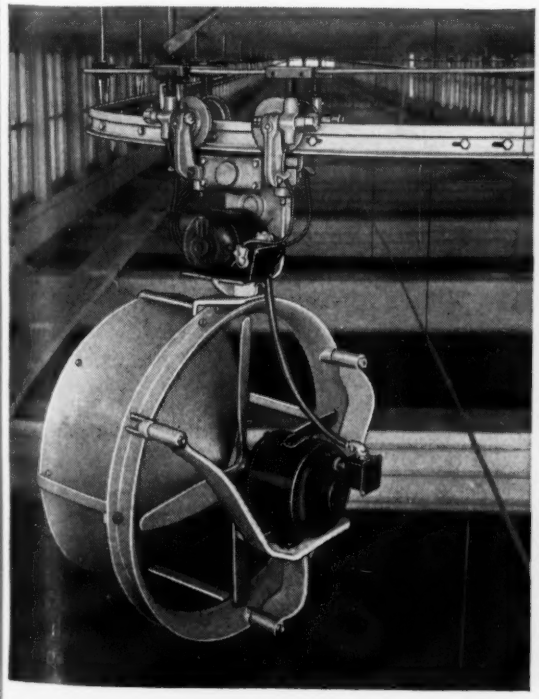
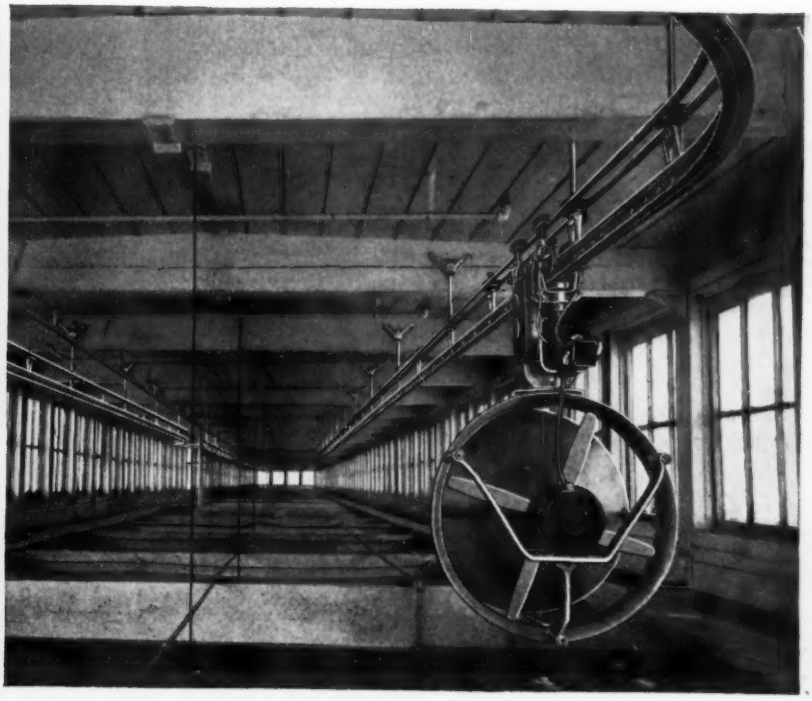
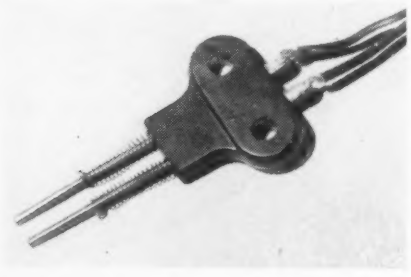




KINKS & SHORT-CUTS

(Continued from page 160)

where needed on the spinning frame. In addition to keeping the cleaners handy and neatly in place, many are saved that otherwise would be wasted. *(K-263)*



Bend the ends of the wires before soldering so that the springs will not draw them through the holes.

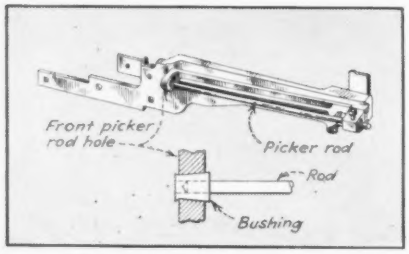
Feeler Is Composed of Discarded Parts

The photograph shows feeler tips which I have made for use on S-3 and other shuttle-changing looms. The wiring gives direct current through the feeler which, I find, results in more power to the solenoid and, hence, less filling running out.

The feeler illustrated was made from one that had been discarded. Even the wires were made from discarded material—jack wires $\frac{1}{8}$-in. thick. The tips were highly polished and the wires are soldered to the ends. So far, I have not used such a feeler on rayon, but I believe it would work if the points were polished well. *(K-310)*

Picker Rod Bushing Compensates for Wear

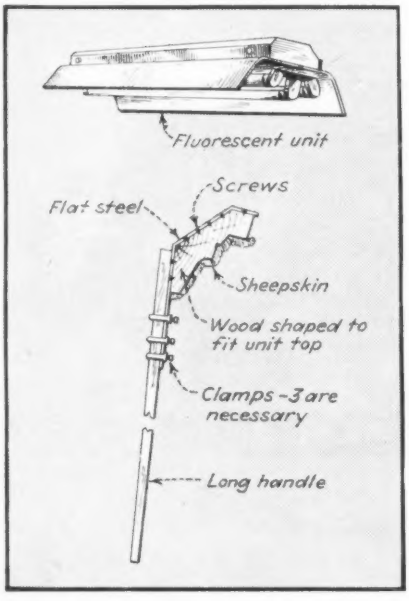
On multiple-shuttle wool, cotton, or rayon looms, the constant pressure of the picker on the spindle rod eventually forces the rod to enlarge the rod hole in the laysword near the crank-arm stud. As the hole wears, it requires longer rods and, in time, tapers the end of the rod. The repair method shown makes a satisfactory repair that will last for years.



Bushing is held in place by taper and by expanding end.

Take a short length of steel or bronze tubing of suitable bore and diameter and taper or otherwise fit it into the enlarged picker-rod hole. It should extend $\frac{1}{16}$ in. out from the outer side. This end is slightly expanded with a taper punch to hold the newly-formed bushing in place. Care must be taken in driving the bushing in place and when expanding the end, as the metal above the hole may be broken off.

The tubing can be cut down to the proper taper on an ordinary emery wheel. To do this, place the tubing over a long bolt and fasten it with a nut. When grinding, hold the short length of tubing so it revolves on an angle against the emery-wheel face. *(K-276)*



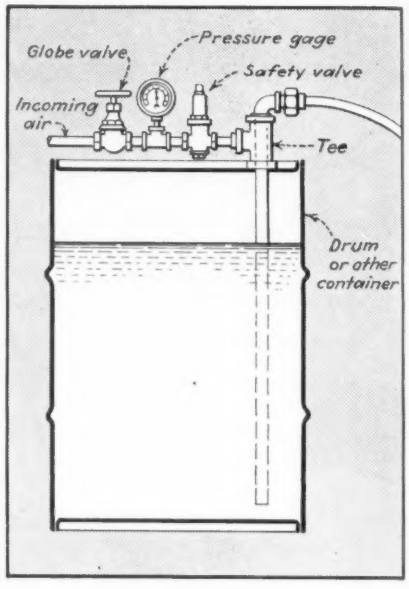
Fasten the wooden form to a steel base when making this cleaning brush.

Brush for Cleaning Fluorescent-Light Units

The cleaning of fluorescent-light units is often neglected, and dust and lint that collects on the top surface often becomes so unsightly that an otherwise spic-and-span department looks untidy. In some mills, cleaning of the entire unit assembly is resorted to on the average of twice yearly. But the cleaning periods can be spaced more frequently if a suitable brush is used for wiping off the top surface.

The brush sketched was designed for a certain type of fluorescent-light unit; alterations can be made in the design to fit any type. After making the wood base to the desired shape from soft wood (preferably balsam or redwood), attach a piece of sheepskin as shown. A handle suitable in length is attached so that the brush can be used easily from the floor.

When the brush becomes dirty or matted, it can be cleaned in a petroleum solvent. *(K-316)*



Gage shows air pressure; safety valve gives additional protection.

Empty Drums Safely With Compressed Air

The widespread use of compressed air in the work of forcing liquids from containers brings into play an element of danger when normal pressures are doubled or tripled through the clogging of the discharge line. Under such conditions, the containers may explode with extreme violence and certainly with telling effect, as was evidenced in an accident when the flying fragments so badly mutilated an attendant as to require amputation of both legs.

Illustrated is a simple yet effective method of performing this work safely since the air pressures used are always indicated on the gauge provided, and a second provision in the form of a safety valve functions when pressures are built up inadvertently, through carelessness on the part of the operator, or through clogging of the discharge line.

A 2x2x2-in. tee with a close-up nipple screwed into the base is the means for attaching the device to the drum. At the upper end of the tee is a $\frac{3}{4}$x2-in. plug through which is screwed a $\frac{3}{4}$-in. diameter pipe of sufficient length to reach within $\frac{1}{2}$-in. of

THUMBS UP

FOR BETTER PROCESSING

ALL THE WAY DOWN THE LINE...

Fybrolize

For the processing of every kind of wool and worsted knitting and weaving yarn there's a specific type of Fybrol available to meet your special requirements. Standardize on Fybrol for these advantages:

Uniform Fibre Lubricity • Ready Scourability • Non-Separating Emulsions • Increased Yield • Lofty Yarn • Reduced Fly Waste • Static Prevention • Improved Efficiency in Combing, Carding, Drawing and Spinning

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Fybrol

America's No. 1 Wool and Worsted Processing Oils

KINKS & SHORT-CUTS

(Continued from page 162)

the bottom of the drum. This pipe has double the normal quantity of threading which permits it to project approximately one inch beyond the plug. The addition of an elbow to this projection and a suitable length of hose completes the discharge end.

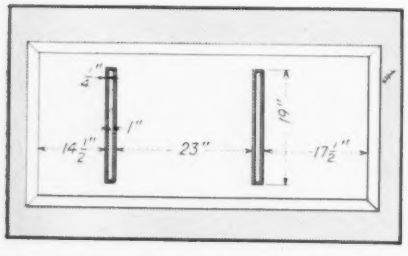
The side opening of the tee is closed with a 2x½-in. plug from which point a ½-in. nipple connects to a safety valve set at 8 lb. Next in line is the 3-in. pressure gage, which, in turn, is followed by the globe valve used to control the input of air.

This compact unit is easy to apply or disconnect from the drum. A union at the discharge elbow will facilitate the disconnection of the hose. *(K-308)*

Tray Prevents Dirt from Falling on Warp

To prevent dirt accumulated by harness pulleys from falling down on warp ends, a metal trough as shown can be fastened to the top part of the loom frame. The trough should have rectangular openings to allow the harness cords to go through. Dirt from the pulleys will fall into the trough instead of on the warp yarn.

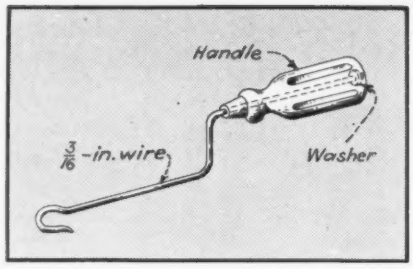
We use these trays and now have much cleaner cloth. Consequently, we are installing them on all our looms. *(K-298)*



Turn back the edges of the two slots so they will not chafe the harness cords.

Only One Hand Needed To Remove Harness Hooks

Mills use many different devices to remove hooks from harness shafts, but usually they require use of both hands of the worker. When using both hands, the worker needs a vise or a clamp of some sort to hold the shafts while removing the hooks. This can be avoided by the handy device shown in the illustration. With it, the worker can use one hand to remove the hooks, while the other hand is free



Use old screw-driver handle and a piece of stiff wire to make this handy tool.

to hold the shafts in place. By using this device, he can produce more work than he can with a hand drill.

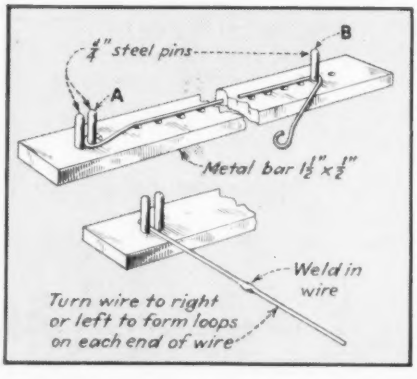
A discarded screwdriver handle and a piece of 3/16-in. stiff wire will make the device to remove harness hooks.

Drill a hole completely through screwdriver handle; bend wire to form a crank. Insert the crank through the handle, and place a 3/16-in. washer on the end that projects through the handle. Now batter the end of the wire over washer, so that the crank will not slip out.

Two types of this device can be made. The first type has a ⅛-in. ring at end of the crank and will remove harness hooks only. The second type has a hook at the end of the crank and will remove harness hooks and screweyes. *(K-244)*

Salvaging Broken Harness-Mount Wires

Harness-mount wires have a tendency to wear at the stirrups or jack eyes and in time will break. Usually the broken wires are thrown out on the scrap heap, but we return them to the stock room and place them in a bin provided for that purpose. When the bin is full, the wires are sent to the welding shop and two lengths are welded together. After the wires are all welded, the welder can send them back to the stock room man, who can cut the wires to the length required



Double pins are used for forming loops on both ends of the wire.

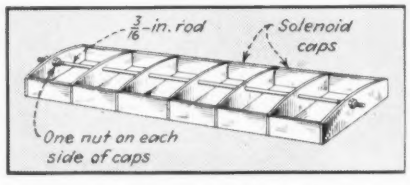
for normal use in harness mounts.

The gadget shown in the illustration can be used to bend and shape the wires. The materials used to make it are: 1½x½-in. cold-rolled steel as long as is necessary for the harness mounts used, and three ¼x½-in. steel pins. Drill two ¼-in. holes at one end of 1½x½-in. metal. The distance between the degrees of the two holes should equal the diameter of the wire to be bent.

Take a new harness-mount wire and place the loop on the long end of the wire around the pin A. With a center punch, mark the place to drill the hole for pin B. This second hole will be on the inside of the bend in the wire where the jack eye or stirrups are placed. (If desired, a series of holes can be drilled ½-in. apart as shown in illustration; then the device will be suitable for any length of harness mount.)

For best results, round off the top ends of the pins and fit them tightly enough so that they do not work loose when bending the loops on both ends of the wire.

This gadget can either be fastened to bench or can be put in vise. *(K-264)*



Tray is useful for carrying small shuttle parts.

Small-Parts Container Made From Solenoid Caps

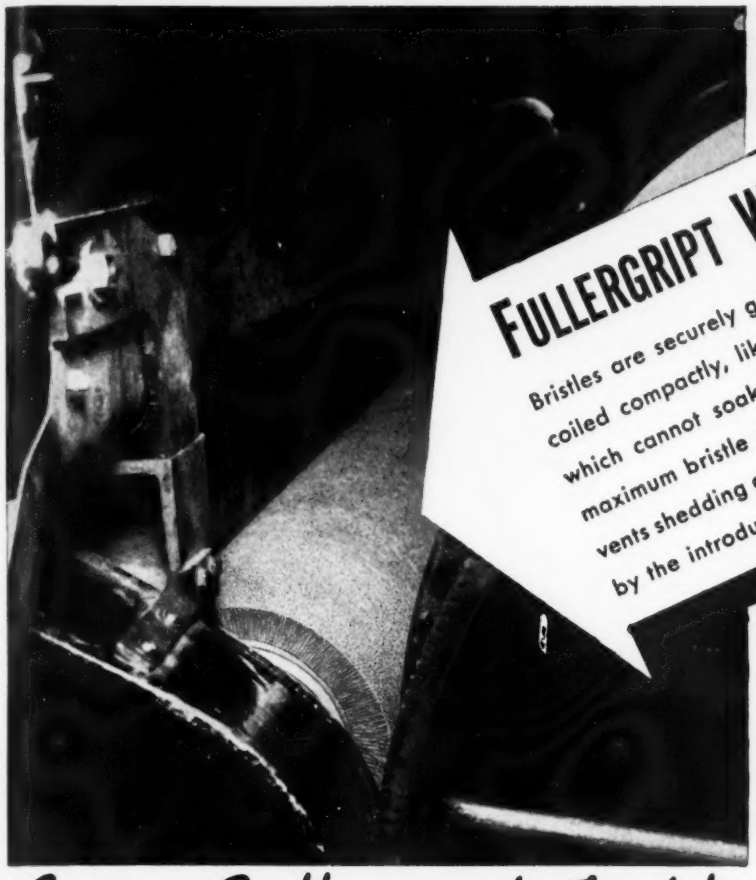
A very convenient small-parts container for shuttlemen or loomfixers can be put together in a few minutes by using solenoid caps that have been discarded.

The size of the caps is about 3-in. long, 2-in. wide, and ½-in. deep.

The method I used in putting these caps together is shown in illustration. Six solenoid caps were placed in together, then a 3/16-in. piece of round rod was measured to the length required and was threaded on both ends for a distance of ½-in. The rod was inserted through the holes in the caps and was fastened with 2 nuts on each end of the rod. Pressure of the outside nuts held the caps together.

Other methods of putting the caps together is to use several 3/16x¼-in. stove bolts (or soft rivets).

This tray is very convenient for small shuttle parts, such as tension rings, pins, eyes, rubber bands, spindle screws, etc. *(K-295)*



FULLERGRIPT WORSTED-CARD BRUSHES

Bristles are securely gript in rust resisting metal. This strip is then coiled compactly, like fillet card clothing, around a metal core, which cannot soak up oil, crack or split. This construction gives maximum bristle density, longest life and lowest cost; it also prevents shedding of bristles and the consequent ruining of good stock by the introduction of highly objectionable "foreign matter."

Again Fullergript Textile Brushes do a Better Job at Lower cost!

Here is a new success story — to add to the ones on Fullergript cotton-card brushes, Fullergript thread-dresser brushes, Fullergript dabbing brushes and other Fullergript textile brushes.

FULLERGRIPT WORSTED-CARD BRUSHES

contribute to this impressive demonstration. Its tightly packed bristles push the wool — all the wool — down into the pins of the Morel clothing, leaving the burrs on top of the pins, free of fiber, ready for easy removal.

Fullergript brushes are proving helpful in three ways on worsted cards — as feed-roll brushes to start the wool properly in the teeth of the first lickerin, as Morel brushes to disentangle the burrs from the wool, and as Morel transfer brushes to carry the wool to the Morel roll and disentangle the burrs at the same time.

In all these applications the great density of the Fullergript bristles insures that the wool will be pushed into the clothing — not back into the brush! This means the brushes will not clog up rapidly, lose their efficiency and require cleaning — always a difficult, time-consuming job.

YES, its a new success story. Do you want to hear the others — on cotton-card brushes, for example? If so, write us and we'll gladly relate them to you.

Do You Want To Remove Burrs?

Look at the quantities pouring out of this worsted-card in a prominent New England combing plant.

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The FULLER BRUSH Company

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THIS IS NO. 50 OF A SERIES ON

GETTING THE MOST FROM WINDING

Information about winding designed to show improvements in winding equipment and new ideas in the winding operation

BOBBIN SPOOL ATTACHMENT (No. 50 Winding Machine)

The Bobbin Spool Attachment makes it possible to wind thread and other yarn onto a single-headed spool, from which it can be drawn in any ensuing operation (such as on a sewing machine) without the necessity of having to pass over the head of a spool.

The Bobbin Spool itself is a single-headed spool, the base end of which has an angle of 45° with the center line of the tube. Packages up to 4" outside diameter may be wound, and the traverse may be from 3" to 5", according to the length of the bobbin barrel.

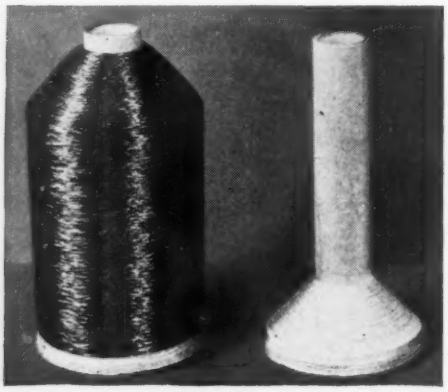

Fig. 1. Full and Empty Bobbin Spools

The use of the Bobbin Spool (Fig. 1) is advantageous to sewing machine operators for two reasons. The yarn always delivers with the twist in the correct direction; that is, no one can make the mistake of putting the spool on the machine upside down and thus altering the twist in delivery. Also, delivery is free, there is no top overlapping spool flange.

The Bobbin Spool Attachment (Fig. 2) provides an automatic means of causing the Traverse Guide to follow the angle of the base throughout the winding, with the result that the finished package has the appearance of a parallel tube, square on the base end and receding on the top end.

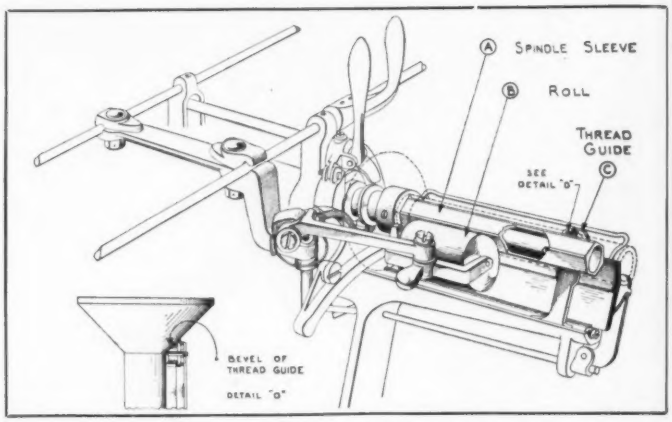

Fig. 2. Bobbin Spool Attachment

It may be applied to any No. 50 Winding Machine equipped for single-end winding.

The operation of the Attachment is shown in Fig. 2. The Bobbin Spool is mounted on a hexagonal Spindle Sleeve (A) which floats on the spindle. As the package diameter increases, the winding is made to conform to the shape of the base of the Bobbin Spool by means of a Roll (B). This Roll is so pivoted that it transmits motion through arms and joints to cause the Spindle Sleeve (A) to slide forward on the spindle.

The Thread Guide (C) is beveled on the side nearest the machine, so that at the inner end of the traverse, the thread slot will come close to the taper of the spool, thus laying the yarn in its correct position.

There is a similar attachment for producing miniature Bobbin Spools accommodating traverse lengths of 1¼" to 2".

PREVENTING YARN WRAP (Roto-Coner*)

Occasionally yarn will break and have a tendency to wrap around the Rotary Traverse, making it necessary to stop one side of the machine in order to cut the yarn off.

There are several ways to prevent this yarn wrap. Some mills stretch a stout piece of twine or tape about an eighth-inch away from and in back of the Traverse, extending the entire length of the machine.

*Fig. 3. Anti-Wrap Brush on Roto-Coner**

A surer way is to use Anti-Wrap Brushes as shown in Fig. 3. These brushes are made with flexible bristles which sweep the surface of the Traverse and instantly pick up any stray end, thus definitely eliminating the possibility of the end wrapping around the roll.

**Reg. U. S. Pat. Off.

See our Catalog in TEXTILE WORLD YEARBOOK 23.4.6

"THERE'S A UNIVERSAL WINDER FOR EVERY TEXTILE NEED"

UNIVERSAL WINDING COMPANY

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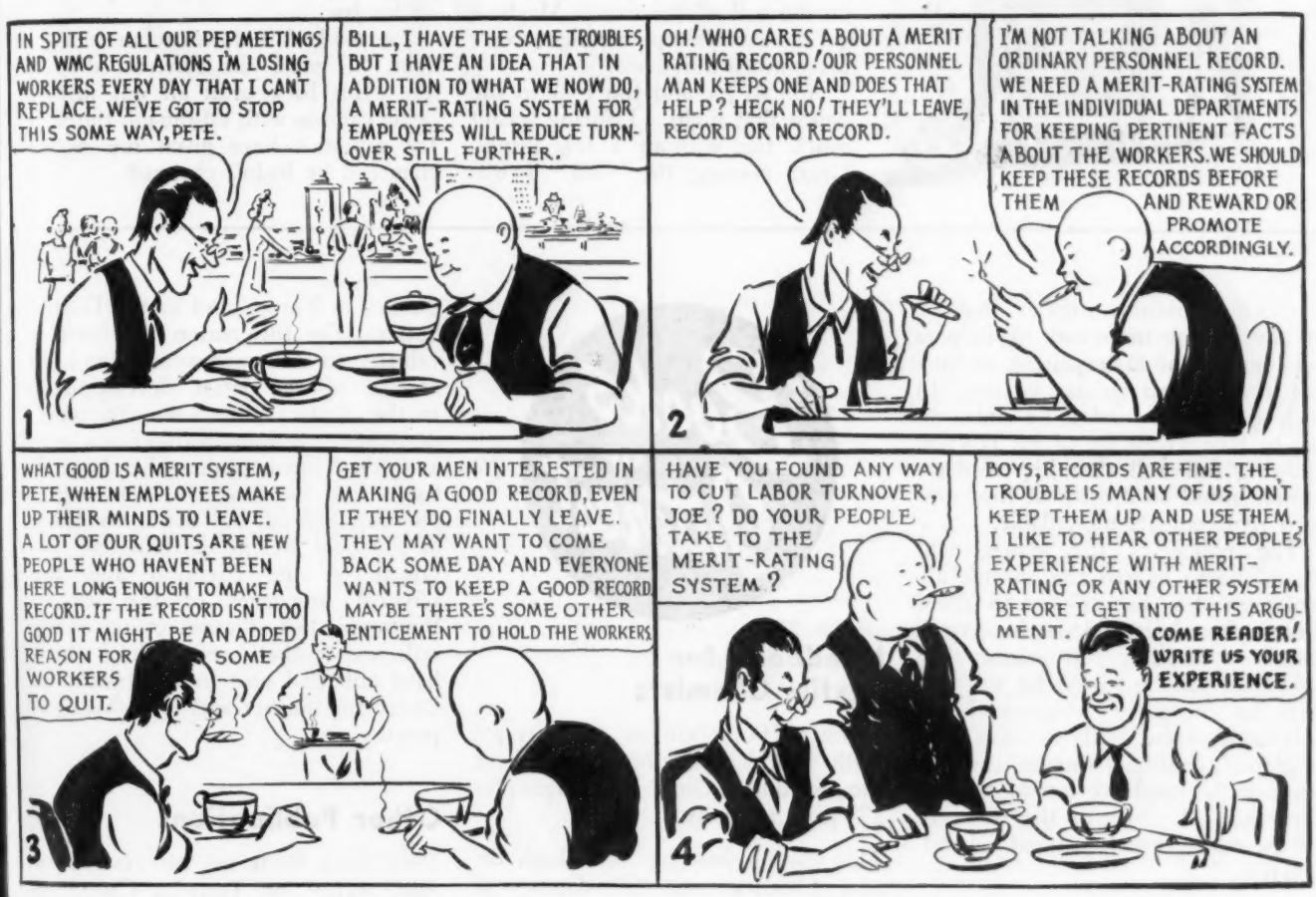
LETTERS to Pete & Bill, discussing material in this department, are paid for when published. Suggestions for the Pete & Bill dialogue will also be paid for if used. If these pages interest you, contribute something to interest others. Address PETE & BILL, Textile World, 330 West 42nd St., New York 18, N. Y.

Pete & Bill

Does Merit Rating Reduce Turnover?

Are morale-booster measures and war-manpower regulations the best means to control labor turnover, or are there other measures such as merit-rating that can be taken to minimize this turnover?


IN SPITE OF ALL OUR PEP MEETINGS AND WMC REGULATIONS I'M LOSING WORKERS EVERY DAY THAT I CANT REPLACE. WE'VE GOT TO STOP THIS SOME WAY, PETE.
BILL, I HAVE THE SAME TROUBLES, BUT I HAVE AN IDEA THAT IN ADDITION TO WHAT WE NOW DO, A MERIT-RATING SYSTEM FOR EMPLOYEES WILL REDUCE TURNOVER STILL FURTHER.
1
OH! WHO CARES ABOUT A MERIT RATING RECORD! OUR PERSONNEL MAN KEEPS ONE AND DOES THAT HELP? HECK NO! THEY'LL LEAVE, RECORD OR NO RECORD.
I'M NOT TALKING ABOUT AN ORDINARY PERSONNEL RECORD. WE NEED A MERIT-RATING SYSTEM IN THE INDIVIDUAL DEPARTMENTS FOR KEEPING PERTINENT FACTS ABOUT THE WORKERS. WE SHOULD KEEP THESE RECORDS BEFORE THEM AND REWARD OR PROMOTE ACCORDINGLY.
2
WHAT GOOD IS A MERIT SYSTEM, PETE, WHEN EMPLOYEES MAKE UP THEIR MINDS TO LEAVE. A LOT OF OUR QUITS ARE NEW PEOPLE WHO HAVENT BEEN HERE LONG ENOUGH TO MAKE A RECORD. IF THE RECORD ISN'T TOO GOOD IT MIGHT BE AN ADDED REASON FOR SOME WORKERS TO QUIT.
GET YOUR MEN INTERESTED IN MAKING A GOOD RECORD, EVEN IF THEY DO FINALLY LEAVE. THEY MAY WANT TO COME BACK SOME DAY AND EVERYONE WANTS TO KEEP A GOOD RECORD MAYBE THERE'S SOME OTHER ENTICEMENT TO HOLD THE WORKERS
3
HAVE YOU FOUND ANY WAY TO CUT LABOR TURNOVER, JOE? DO YOUR PEOPLE TAKE TO THE MERIT-RATING SYSTEM?
BOYS, RECORDS ARE FINE. THE TROUBLE IS MANY OF US DON'T KEEP THEM UP AND USE THEM. I LIKE TO HEAR OTHER PEOPLES' EXPERIENCE WITH MERIT-RATING OR ANY OTHER SYSTEM BEFORE I GET INTO THIS ARGUMENT.
COME READER! WRITE US YOUR EXPERIENCE.
4

Letters From Readers

Written Instructions Are Practical

"Written and Oral Instructions"
(Pete & Bill, Feb. 1945)

Dear Pete & Bill:

Dependability and reliability are the determining factors in whether a worker must be given written or oral instructions on the job to be done. The overseer is probably the best judge as to whom he can depend on when issuing orders. Should the employee be thoroughly responsible, an oral order should suffice. On the other hand, an individual who has proved negligent at times should be handed a written order. This procedure definitely lays down how and when a specific job is to be performed.

The above method, however, is not the most practical one since difficulties might be met in handling the help on this basis. Workers subconsciously compete with one another. An employee with a written order will unquestionably bear grievance against one with an oral order. It is for this reason alone that the most practical plan for the management would be to issue written instructions at all times. By so doing, inferior and superior workers will follow specifications and have no cause for complaint. (PB-400).

Must Play Along With Absentee

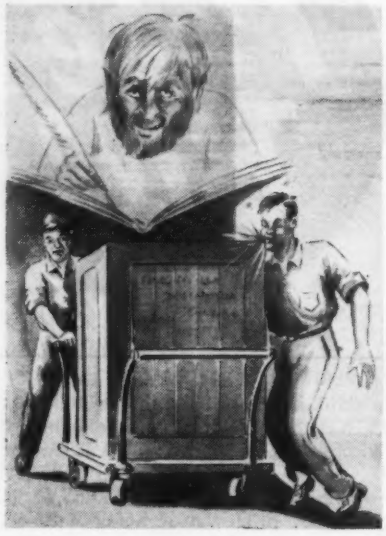
"The Chronic Absentee"
(Pete & Bill, Jan. 1945)

Dear Pete & Bill:

Management must play along with the chronic absentee, the manpower shortage being what it is. The war's end will, no doubt, turn the tide in the employer's favor.

The fact that an employee becomes

MEMORIES OF OLD MAN CARELESSNESS—*By Martha B. Pittenger*



No. 27—The Change

"Joe, you work too hard," remarked Jim to Joe one noon. "every night you go straight home and sleep your head off. What you need is a change. How about going over to the dance hall tonight. Boy, that's a place to forget your worries. And tomorrow you'll feel great."

"Guess I might as well try it, Jim," exclaimed Joe. "I *do* stay on the ball all the time. Maybe I get too much sleep; one night won't make much difference."

And so Joe and Jim took in the dance that night. Dancing wasn't much fun without a few drinks. Great evening they had. I was watching them. If I didn't see an accident that night, I knew where I could see one the next morning.

The next day Joe came to the mill with a foggy feeling in his head; his eyes were about half open. Around the corner of the machine shop he went, while he rubbed his sleepy eyes. He didn't see the man coming toward him with a large box on a truck. The box banged Joe plenty hard, causing a deep cut on his jaw.

Joe marked it down as an accident. I guess the foreman did, too. But back of it all was just being careless with off-the-job time. Joe wouldn't have given me my chance if he hadn't changed!

a chronic absentee implies that he or she is not interested in helping his country, the management, or himself in insuring a quicker victory. In such a spirit of mind is he endeavoring to take advantage of his position knowing full well that his employer cannot afford to dispose of him now with replacements unavailable.

The policy of the management should be to by-pass the chronic absenteeism of a "slacker" but to record this employee's attitude on his payroll record so that the very minute this individual can be spared he will perform his chores for someone else.

If management made an issue of an employee's continual absence, it might result in the employee leaving the job altogether. Victory in the war and for the management go hand-in-hand. (PB401)

Let Overseer Determine Worker's Fitness

"Determining Employee Aptitudes"
(Pete & Bill, Nov., 1944)

Dear Pete & Bill:

The overseer, from experience, should by all means determine the fitness of the worker. I would say the overseer should pass judgment—instead of the personnel department having its say.

We all know, and Pete & Bill will assuredly agree, that "Experience Teaches a Dear School" (and some folks learn in no other). So, on that score there should come no argument from the office. *(PB204)*

Books of Interest

Handbook for Textile Chemists

LANGE'S HANDBOOK OF CHEMISTRY, Fifth Edition; Handbook Publishers, Inc., Sandusky, Ohio; 1776 pages plus 271-page appendix.

This edition has the same high degree of accuracy and up-to-dateness of the earlier editions, and accordingly meets the needs of textile chemists. Many of the tables have been extended and others rewritten to include recent information. Because of the scope of this handbook, textile chemists will find it of great value when they are in need of information on some subject not included in their own field of specialization.

Review of Plastics

PLASTICS—SCIENTIFIC AND TECHNOLOGICAL, by H. Ronald Fleck; Chemical Publishing Co., Inc., 234 King St., Brooklyn, N. Y.; 305 pages; $6.50.

Written in England, this book sets forth the newest developments in plastics in Europe and in the United States. For this reason the book is valuable to a chemist wishing to keep abreast of the latest developments in the plastic field. One chapter is devoted to synthetic textile fibers such as nylon, Vinyon, protein fiber, Lanital, Saran, and the rayons. This chapter on fibers is brief, but the actual value of the book lies in the material contained on the chemical and the physical properties of the various thermo-plastics, thermo-setting materials, and synthetic resins, all of which have potential uses in the textile industry for finishes and for other purposes.

Other Publications

1944 YEAR BOOK OF THE AMERICAN ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS; Howes Publishing Co., Inc., 1 Madison Ave., New York 10; 692 pages; $3.50.

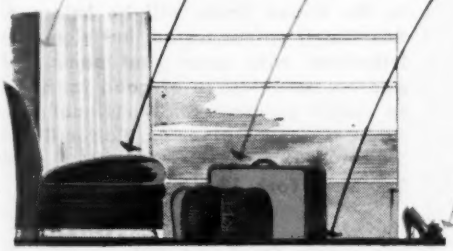
BASICS OF SUPERVISION, H. W. Heinrich; Alfred M. Best Co., Inc., 75 Fulton St., New York; 180 pages; $3.00.

THE FOREMAN'S GUIDE TO LABOR RELATIONS, Bulletin No. 66; U. S. Dept. of Labor, Washington, D. C.; 28 pages.

COTTON GOODS INDUSTRY, (Employment, hours and earnings and turnover rates by areas, Jan. '42 to April '44); U. S. Dept. of Labor, Bureau of Labor Statistics; Washington, D. C.; 83 pages.

fresh ideas for new fabrics start with petroleum and brine!

SARAN



Textile men's lively interest in Saran is inspired by the forward strides it represents in important new materials. Saran, derived by Dow from such sources as petroleum and brine, gives the textile industry a raw material that can carry it nearer postwar goals. The synthetic filaments from which colorful Saran fabrics can be woven fulfill long desired ideals and possess a combination of properties hitherto unavailable.

Speaking of properties, fabrics woven from Saran are chemically resistant—they are not affected by bleaching materials or the most active chemical ingredients used in cleaning and laundering. Combine this important quality with Saran's imperviousness to dirt and grease, its extraordinary toughness, its easy cleanability and you have ideal qualifications. Fabrics woven from Saran monofilaments fill the bill for luggage, upholstery, bus and motor car seats and similar applications where long-wear durability is of paramount importance.

Some of the finest and freshest ideas in textiles are being inspired by Saran. That's why we suggest that you get acquainted with this new plastic material now.

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Saran molding compounds, produced by Dow, are extruded as monofilaments or thread by skilled licensees located throughout the country. All of them are in a position to give you details about Saran and its possibilities. They include:

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★ Firestone Tire & Rubber Co., Akron, Ohio
★ Hodgman Rubber Company, Framingham, Mass.
★ Irvington Varnish & Insulator Co., Irvington, N. J.
★ National Plastics Products Co., Odenton, Md.
★ Visking Corporation, Chicago, Illinois
(merchandised under the name Permalon)
★ Western Felt Works, Chicago, Illinois

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CLINTON

STARCHES

FOR ALL

TEXTILE PURPOSES

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QUALITY

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Round Table

FOR EXCHANGE OF IDEAS

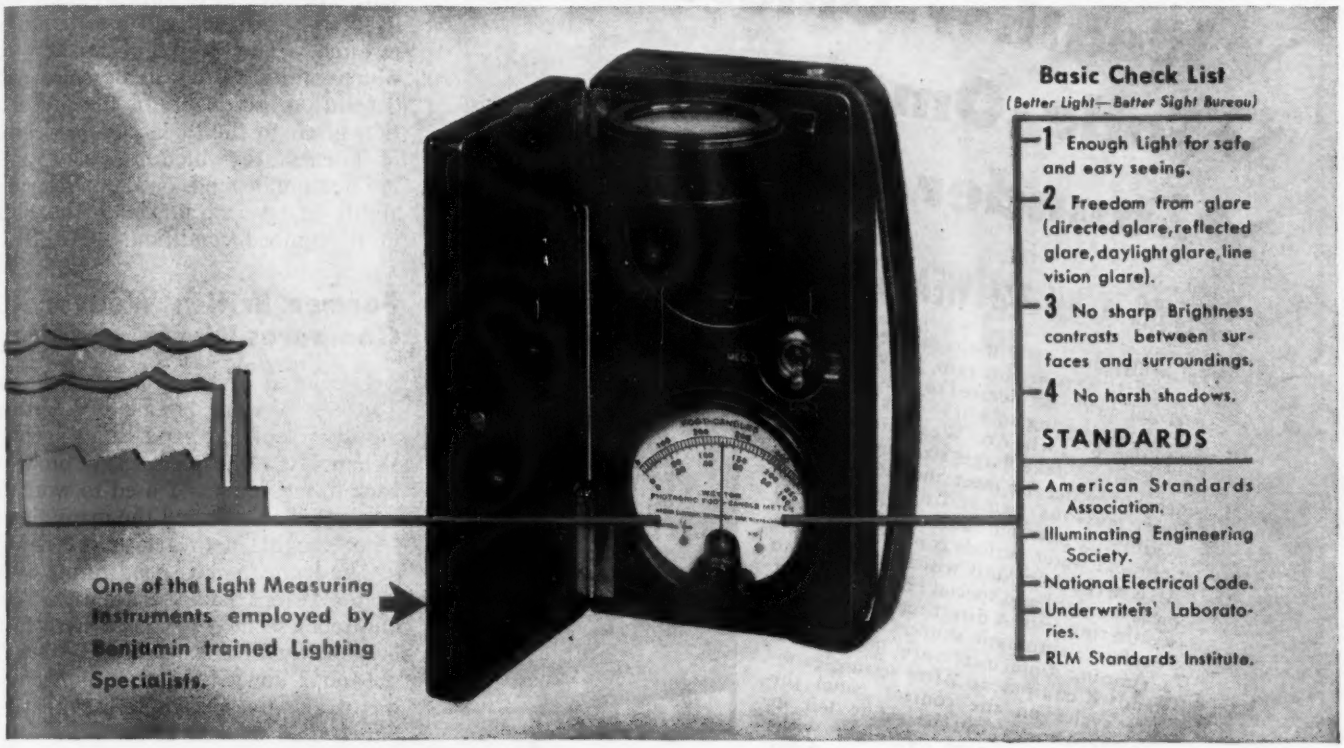
The Round Table is designed to supply a meeting place where mill men can discuss problems among themselves. It is open to all readers for discussion of subjects relating to mill management and operation. Names of contributors to the Round Table will be held confidential if so requested, but sign contributions with your real name and address as evidence of good faith and to permit payment for items published. Address contributions to: Editor Round Table, Textile World, 330 West 42nd St., New York 18, N. Y.

Distribution of Fibers Called Key to Good Yarn

The fact that many European manufacturers are able to make better yarn of some classifications than that made in America can be largely attributed to the more careful attention given to the principles involved in the early processes of spinning yarn from cotton fibers. The proper redistributing, and spreading or drawing of cotton fiber are essential in the making of good yarn.

In contrast to the American emphasis on economy, the European manufacturer is careful not to overtax the capacity of the machines for separating cotton from other matter. The separating of the fibers is done by the beaters, but the spreading depends largely on air currents, which cannot perform efficiently if the capacity of the machines is overtaxed. Much stress is put on the weight of the finished lap, which can be fairly well assured by the action of the evener motions; but the yard-to-yard evenness depends wholly on a good distribution of the fibers at each of the redistributing points, and for this a well synchronized condition between the air currents and the amount of

How far is your Lighting from Today's accepted Industry Standards?



Basic Check List
(Better Light—Better Sight Bureau)

1. Enough Light for safe and easy seeing.
2. Freedom from glare (directed glare, reflected glare, daylight glare, line vision glare).
3. No sharp Brightness contrasts between surfaces and surroundings.
4. No harsh shadows.

STANDARDS

- American Standards Association.
- Illuminating Engineering Society.
- National Electrical Code.
- Underwriters' Laboratories.
- RLM Standards Institute.

TODAY'S accepted lighting standards in Industry are being proven by war production as essential to higher rates and quality of production . . . to employes' maximum safety, health, and morale.

Does your lighting meet these higher Industry lighting standards? Only a job by job and department by department survey of your plant will enable you to determine your answer. Unless your plant has been newly built or has been completely re-lighted within the past three years, you will probably find that for many seeing tasks and in many departments, your employes have insufficient or improper lighting during most of the day and all of the night.

Lighting Deserves Executive Attention

Executive consideration of the lighting question is indicated by the fact that adequate lighting and comfortable seeing in conformance with the American Recommended Practice of Industrial Lighting is a part of the problem of "general working conditions."

Importance of Fixture Design

To provide efficiently and economically lighting that conforms to today's Accepted Industry Standards requires careful selection of properly designed equipment. To be properly designed, equipment must provide proper shielding of the light source to minimize direct glare, provide the proper direction, distribution and diffusion of the light upon horizontal and vertical surfaces and for certain special locations protection against hazards of explosive gases dust and water vapors.

Through the specification of Benjamin equipment assurance is had of equipment design and construction which conforms with all recognized illumination, electrical and mechanical standards as provided by the National Electrical Code and the RLM Standards Institute.

Write for FREE Booklet

Send for a Free copy of the Booklet "Productive Lighting" containing much valuable information on how to obtain best lighting results. With it will be sent complete information on how you may obtain the assistance of a Benjamin Trained Lighting Specialist in analyzing the performance of your lighting and in making recommendations without cost or obligation. BENJAMIN ELECTRIC MFG. Co., Dept. H, Des Plaines, Illinois.

Benjamin Lighting Units for every essential textile requirement.

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Lighting Equipment

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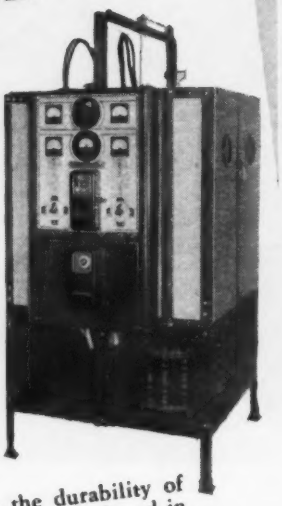
★ *Accepted by the Textile and Dyestuff industry as the standard accelerated testing machines for determining the light fastness, weathering and washing qualities of materials.*

Weather-Ometer
Fade-Ometer
Launder-Ometer

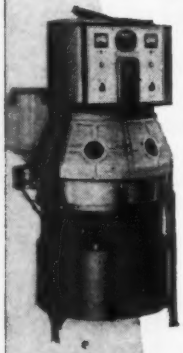
ATLAS *twin arc* WEATHER-OMETER



Faithfully duplicates the combined weathering effects of sunlight, rain, heavy dew and thermal shock; accelerated to reduce years of actual weathering to a few days of testing.

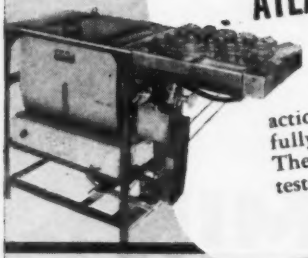
The new Twin-Arc Weather-Ometer is equipped to take large size textile specimens in order to meet the new Federal Specifications demanding accelerated weathering tests. Full automatic control of light and water periods is provided by the Atlas cycle timer unit which can be set to meet standard and special requirements of weathering tests. A direct reading thermal regulator, automatic shut-off switch and a running time meter are included as standard equipment. After setting exposure cycles on the control panel the Weather-Ometer can be safely left in continuous operation overnight without attention except to replace carbons once in 24 hours.

The Atlas Weather-Ometer proves the durability of materials under exact conditions of weathering found in actual use in outdoor exposure.



ATLAS FADE-OMETER

The recognized standard testing machine for determining the fastness to light of dyestuffs and dyed fabrics. Specimens are rotated around the Atlas Enclosed Violet Arc—the closest approach to natural sunlight—in masked holders. Automatic temperature control to within ±3° F. and humidity regulated by a constant reservoir according to requirements of tests. Operation is completely automatic without attention from operator; can be left in continuous operation overnight.



ATLAS LAUNDER-OMETER

The standard laboratory washing machine of A.A.T.C.C. for testing color fastness, staining, shrinking, resistance to washing and mechanical action. All factors including washing action can be carefully controlled and reproduced identically at any time. The new preheating loading table increases accuracy of tests by starting all samples at uniform temperature.

ATLAS ELECTRIC DEVICES CO.
361 West Superior Street, Chicago 10, Illinois

Originators and sole manufacturers of accelerated testing devices for over a quarter of a century.

fiber being processed is absolutely essential.

There is no possibility of getting the best possible end product when the beginning is incorrect. There is no definite standard for a given classification of yarn; there are only tabulations which may be used for comparison. An attempt to improve the quality of the yarn will call for thorough research. The degree of fineness to which carded yarns can be spun will depend on the quality of the preparation given to the fibers. The degree of fineness to which combed yarns can be spun depends on the mill man's ability to take advantage of the fiber in its combed condition. *(R-130)*

Former British Weaver Compares Work Conditions

I enjoyed reading the article in TEXTILE WORLD about our cotton industry looking good to England. When I saw the pictures, it brought back to me the way I used to work in England years ago and the many times I got caught in the cloth rollers.

The looms looked good to me after all the years I have been away. The one loom seemed to me to have four harnesses with a skip draw, 1-3-2-4, 2 up and 2 down. Another apparently was weaving a special cloth similar to one I used to weave.

I would like to see the English weavers have it as easy as the American weavers do with drop-wire stop motions, automatic looms, persons to take your cloth off, and the like. *(R-129)*

Cotton Reported With Extremely High Strength

We have read with interest the article entitled "Research Activity Continues Unabated" which appeared in TEXTILE WORLD, February, 1945, beginning on page 115.

It is noted in this article that Owens-Corning announces the laboratory production of invisible glass fibers with a theoretical strength of 3,500,000 lb. per sq. in. It is almost inconceivable that a fiber should have a strength of such an extraordinarily high value as reported. Is the figure reported correct or has there been some inadvertant error in connection with the decimal point or transcription?

We also note that the strength reported is referred to as theoretical value. We assume that physical strength tests were made on the individual glass fibers and that the theo-

From this . . .

Fabrics with a future!

If ever the quality of water was important to the textile industry, it is now when so much is being done with chemical processing.

The impurities water contains could interfere with chemical reactions and affect the quality of finished fabrics. Permutit* removes these impurities.

Today many mills control the quality of their process water —and of their woolens, cottons, silks and rayons—with Permutit Water Conditioning Equipment.

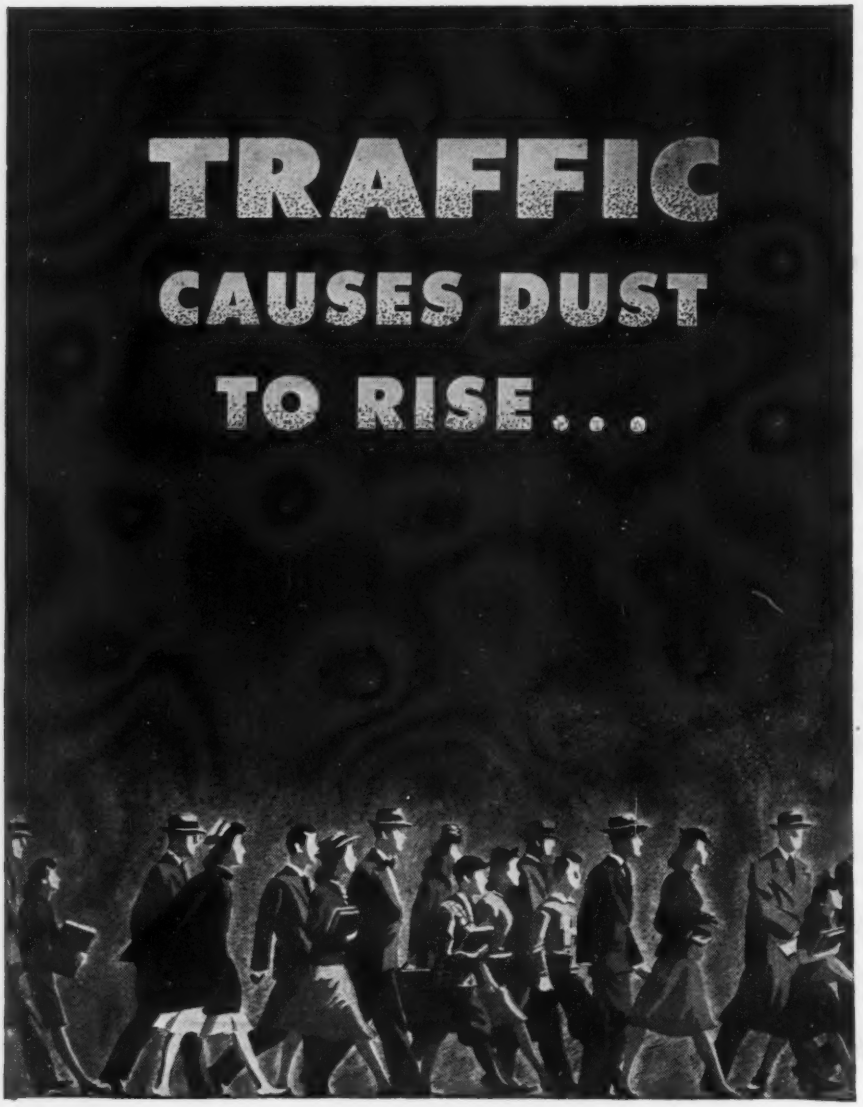
Plan *now* for more efficient mill operations and finer fabrics. Write for the facts on controlled-quality water to The Permutit Co., Dept. B1, 330 West 42nd St., New York 18, N. Y., or Permutit Co. of Canada, Ltd., Montreal.

*Trademark Reg. U. S. Pat. Off.

Better water makes BETTER FABRICS!

PERMUTIT

WATER CONDITIONING HEADQUARTERS



WESTONE

FLOOR TREATMENT

CONTROLS DUST

Westone, the chemical floor treatment in liquid form simplifies floor maintenance problems. It continuously improves floor appearance, penetrates rapidly and evenly and *actually seems to become part of the floor material itself.* Westone controls dust in room atmosphere because the presence of dust in room atmosphere is due not so much to open windows as it is to floor traffic. The problem is to *keep the dust from rising.* Westone has, in addition to its other properties, a peculiar *affinity for dust* and when properly used to maintain a floor, the atmosphere will be comparatively free from it because foot traffic will not cause the dust to rise. Westone is very economical to use.

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WEST DISINFECTING Company

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retical strength reported represents a calculation based on the strength of single fibers and with due regard to their cross-sectional features. Is this correct?

For your information I may say that laboratory records show several Sea Island cottons with a tensile strength of 110,000 to 120,000 lb. per sq. in., and we have considered such a strength to be unusually high for cotton fibers in the general sense. However, if the reported strength for the glass fibers is correct, it would mean that such fibers have a strength of approximately 30 times the highest strength which we have found for high grade and exceptional Sea Island cottons. *(R-124)*

(The Fiberglas figure given is correct for theoretical strength as the yarn is spun. Actual useable strength is much less. The figure merely shows what is possible. Ed.)

Thread Guide Should Not Cause Trouble

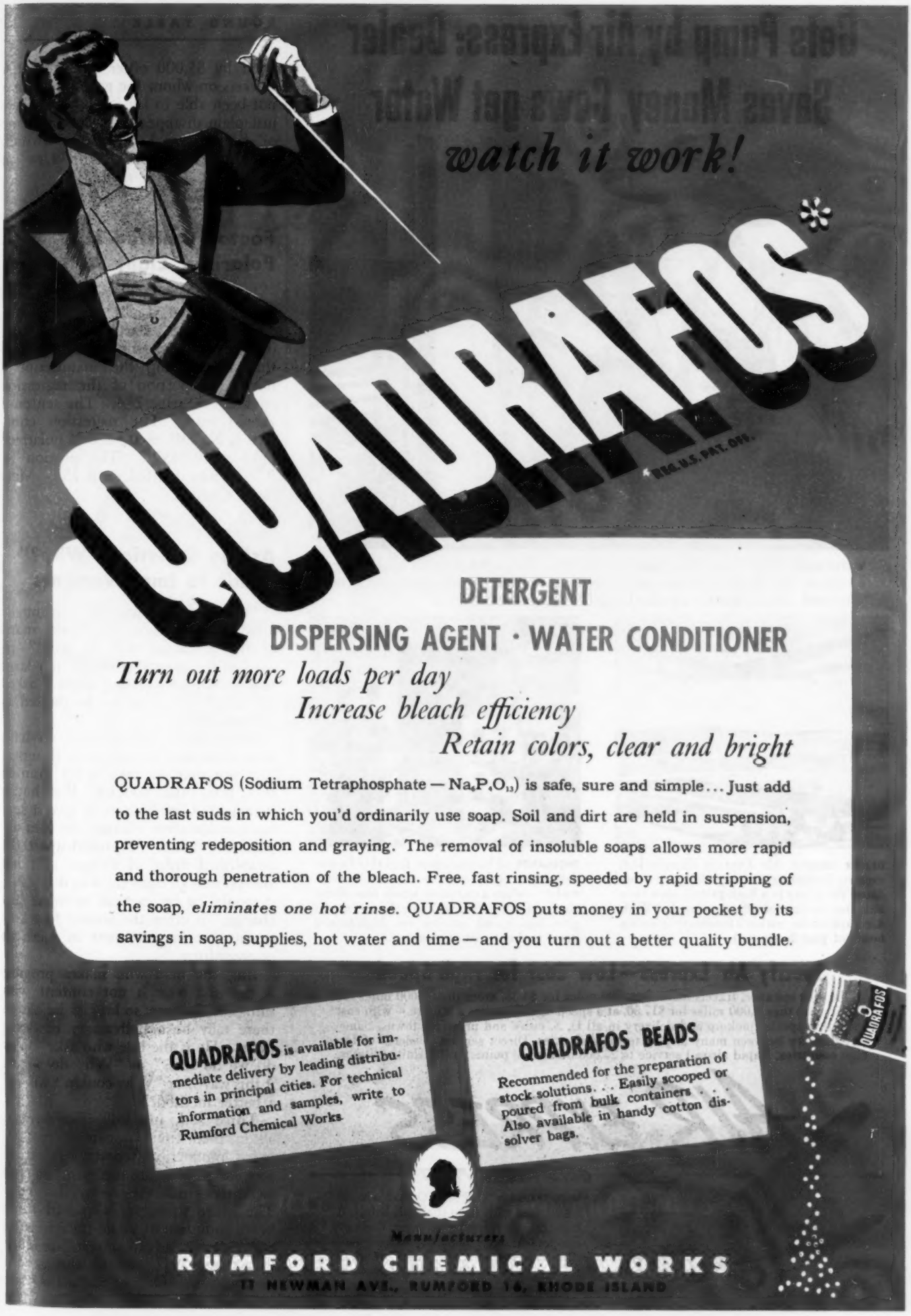
In the February issue under "Kinks & Short-Cuts," somebody attempts to explain a bad performance of thread guides on the No. 90 machine under the heading "Removing Tip Improves Quiller-Guide Performance."

It is obvious from the article that either inadequate or incorrect equipment is being used. There is no need for thread guide breakage or for interference with the bunch builder. Quite obviously, the thread guide holder rest is either not being used at all, or an incorrect rest is being used. *(R-125)*

English Textile Worker Returns at Age of 84

You may be interested in this very touching story of an English textile worker who was listed in the King's Birthday Honors (the same list from which Lloyd George was made an Earl). The press notice of the old lady ran: "Three years ago, Miss Leah Burgess, of Powell St., Ellenbury, who is 84 and has been awarded the B.E.M., went back into the cotton trade in response of an urgent appeal for operatives. At the New Victoria mills she took charge of four looms and has worked there ever since. Miss Burgess who had worked for 71 years in the cotton industry retired in 1941 when her mill was closed under the Concentration Order and she says she was glad to go back after 14 months of idleness."

Unfortunately for the reputation for patriotism of British textile workers, Miss Burgess' example was not emu-


watch it work!
QUADRAFOS*
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DETERGENT
DISPERSING AGENT · WATER CONDITIONER
Turn out more loads per day
Increase bleach efficiency
Retain colors, clear and bright
QUADRAFOS (Sodium Tetraphosphate — $Na_6P_4O_{13}$) is safe, sure and simple... Just add to the last suds in which you'd ordinarily use soap. Soil and dirt are held in suspension, preventing redeposition and graying. The removal of insoluble soaps allows more rapid and thorough penetration of the bleach. Free, fast rinsing, speeded by rapid stripping of the soap, eliminates one hot rinse. QUADRAFOS puts money in your pocket by its savings in soap, supplies, hot water and time — and you turn out a better quality bundle.
QUADRAFOS is available for immediate delivery by leading distributors in principal cities. For technical information and samples, write to Rumford Chemical Works.
QUADRAFOS BEADS
Recommended for the preparation of stock solutions... Easily scooped or poured from bulk containers... Also available in handy cotton dissolver bags.
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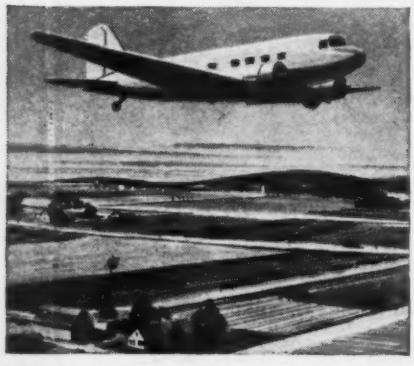
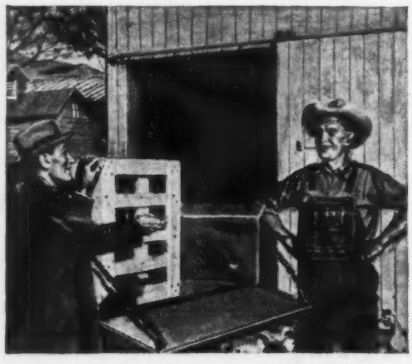
Gets Pump by Air Express: Dealer Saves Money, Cows get Water

WATER PUMP on Wisconsin dairy farm breaks down. The owner gives his local dealer a hurry-up call. Dealer promises quick delivery even though pump must come from Cleveland. (He has it in the morning by specifying Air Express.)



DEALER ABSORBS Air Express charges but, even so, he figures a saving of money — because the pump is a high-priced, slow-turn unit that he cannot afford to stock. (With Air Express the nation's inventory is within hours of your business.)



THOUSANDS of businessmen find this fastest delivery a real economy — *a real money-maker* — when a customer wants something not in stock. (Yes, with Air Express, you give high-speed service on high-priced items without cost of stocking.)

Specify Air Express — Low Cost for High Speed

25 lbs., for instance, travels more than 500 miles for $4.38, more than 1,000 miles for $8.75, more than 2,000 miles for $17.50, at a speed of three miles a minute — with cost including special pick-up and delivery in all U. S. cities and principal towns. Same-day delivery between many airport towns and cities. Direct service to scores of foreign countries. Rapid air-rail service to 23,000 off-airline points in the United States.

AIR EXPRESS

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lated by 85,000 other female textile workers on whom the government has not been able to lay its fingers. They just plain disappeared. This was one of the principal causes for Britain adopting its Labor Draft Law in December, 1941. *(R-128)*

Factor Omitted in Polarized Light Article

In reading over the article I wrote on "Polarized Light Preferred for Maturity Tests" starting on page 161 of February TEXTILE WORLD, I find that in retyping the manuscript I omitted a portion of the regression equation on page 214. The sentence should read, "The regression equation is Na OH = 0.9876 X polarized light + 0.7432." The portion + 0.7432 was omitted. *(R-132) Mary Anna Grimes.*

Asking Question "Why?" Leads to Improvements

"Give me men who are continually asking the question 'Why?' and many of my problems will be over," remarked the general manager of a large mill with much feeling when I asked him what characteristics he desired in his executives.

There comes a time when we have been associated so long with things as they are that we take it for granted there is no other method. If a change is suggested, we hesitate to give it serious consideration because the idea appears too radical. It would upset the established order of things. "It has always been all right the way it is. No, it would be impractical to make any change," is often the answer to a suggestion for improvement in methods or procedures.

But, the man who makes progress is the one who is not content with things as they are, so long as he thinks there may be a better way of doing them. He is the one who asks "Why do we do this?" or "Why do we do it this way?" or "Why couldn't we find a better method?"

Three clerks in a mill office devoted all of their time to making out detailed production reports. Increased production added to their work to such an extent that they asked for help. The office manager, who had never heard comment he could trace to these reports, decided to investigate their importance. He found the reports were carefully filed in the main office without being used. He had little

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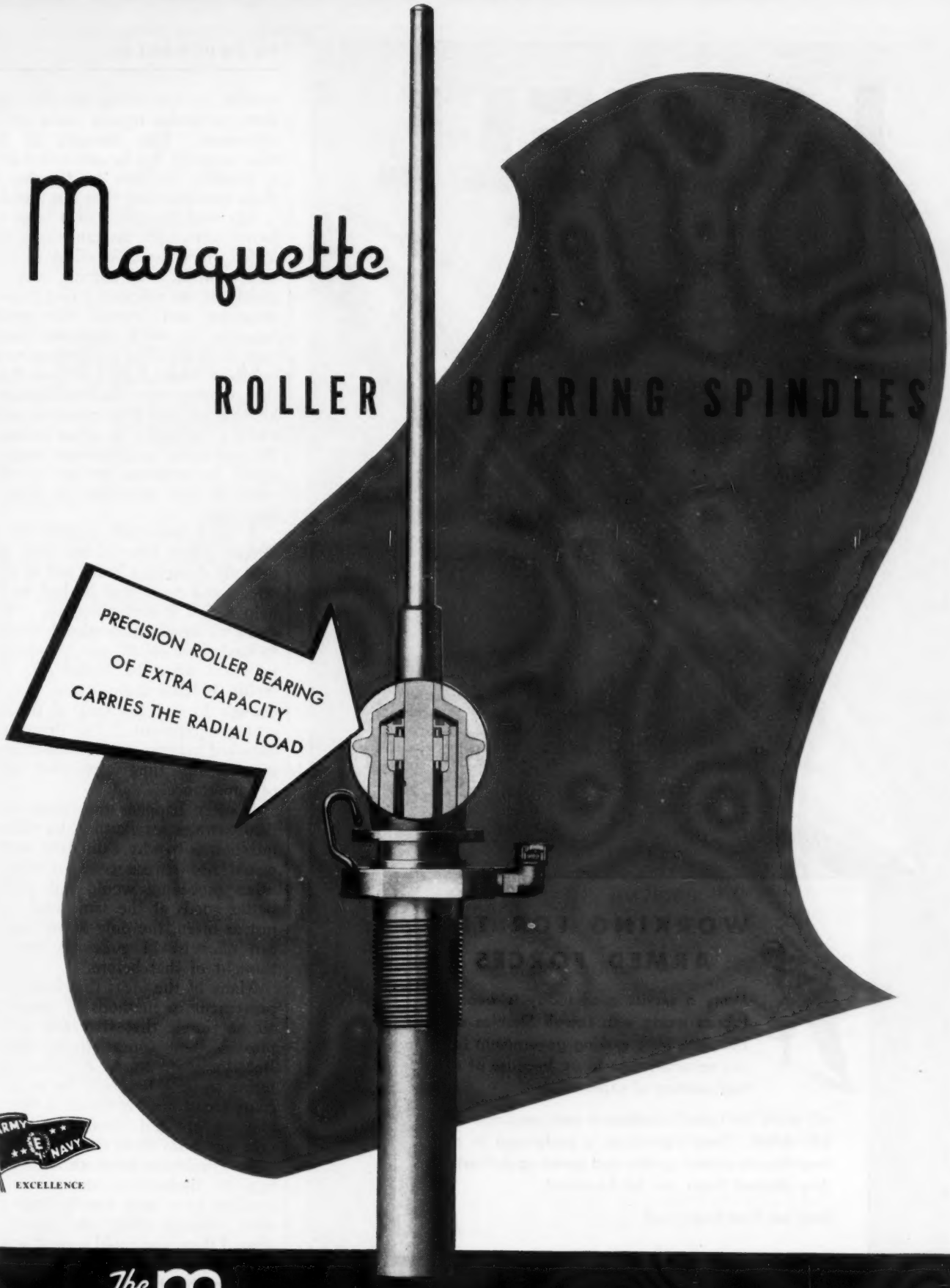

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trouble in convincing his boss that these particular reports could be discontinued. The curiosity of that office manager led to results that made it possible for him to transfer the three clerks to work that was useful.

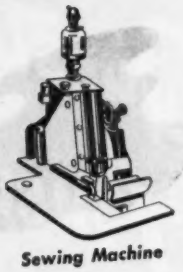
The superintendent of a large mill found that its fire insurance rates were higher than those in effect in other similar mills. Wondering why this should be, he solicited a visit from an inspector and learned the specific locations in which improved precautions or additional equipment would result in lower rates. It was found that in many cases the mere change in location of available apparatus would result in savings. In other instances, the cost of the precautionary measures would be absorbed in two or three years by the reduction in costs in insurance.

A yard boss lost control of his temper when four of his men accidentally dumped a heavy roll of goods off a hand truck and he had to find help to get it back in place. "Why don't we install an overhead conveyor to haul these rolls?" was the question he asked when he cooled off. The saving in labor alone in one year was enough to pay the cost of the conveying equipment. The decrease in damaged material and the reduction in idle machine time were other factors of importance.

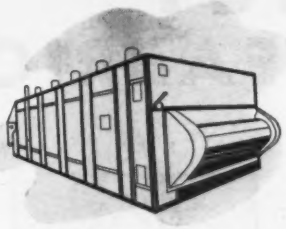
It often happens that a supervisor demonstrates his alertness by raising a question as to why a different method would not reduce costs or why another procedure would not produce better goods at the same cost. And just as often, the only answer anyone can offer is: "I guess no one ever thought of that before."

Many of the ideas that lead to improvement in methods or procedures are so simple that after they are expressed they appear quite obvious. But, for some reason or other, there seems to be a tendency for us to become accustomed to things as they are, and we are not always inclined to raise questions about them. However, many employees have attracted attention to themselves, and many promotions have been won by men who were curious about the conditions around them and could suggest ways of making improvements. In many cases, the opportunity for improvement was so evident that others would say: "Why couldn't I have thought of that?"

The man who makes an outstanding success of his job and profits for his employer is the one who has retained his "bump of curiosity." He asks "Why?" *(R-120) James J. Jackson.*



Sewing Machine



Textile Dryer

Piece Dye Kettle

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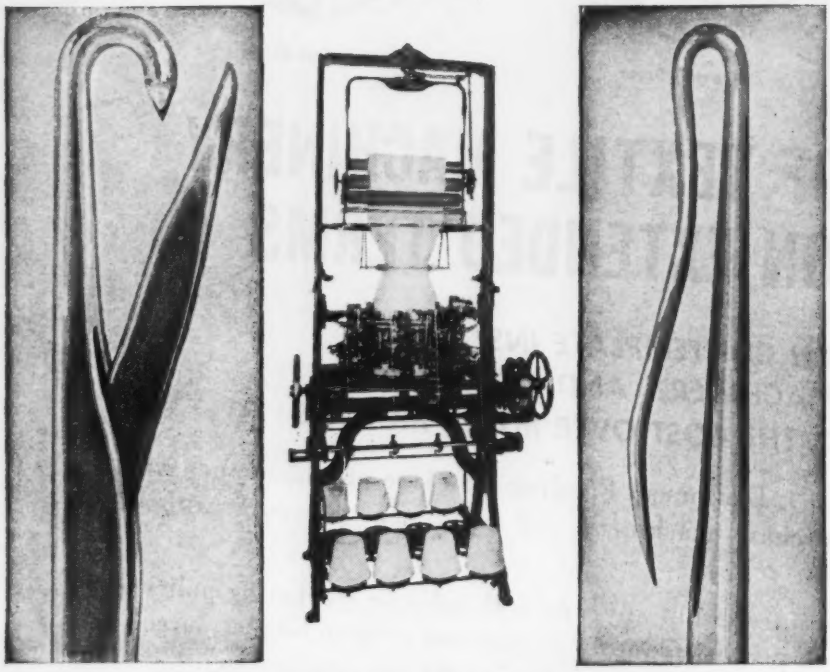

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Questions and Answers

Machine Assignments for Roving

Technical Editor:

We are at the present time endeavoring to make a few changes in our mill, but before doing so, would like to get outside information on machine assignments on roving frames. Please let us know what up-to-date mills consider as a full assignment for an operator:

Our slubbers are of 10x5¼, 10x6, and 12x6 bobbins. Intermediates are of 10x5, and roving frames 7x3¼, 7x3½, and 8x4.

Our 10x5¼ slubbers are of 80, 90, and 102 spindles each; the 10x6 are of 92 spindles, and the 12x6 are of 92 spindles each. The intermediate frames are of 116 and 138 spindles each. The 7x3¼ roving frames are of 176 and 200 spindles each; the 8x4 of 148 and 160 spindles each, and the 7x3½ are of 160 spindles each.

In giving the number of spindles per operator, we would like to know what other work is done by the employee, such as doffing, cleaning, creeling, and oiling.

It is quite possible that a number of doffers are used, and if this is correct, how many spindles or frames per operator.

(9034)

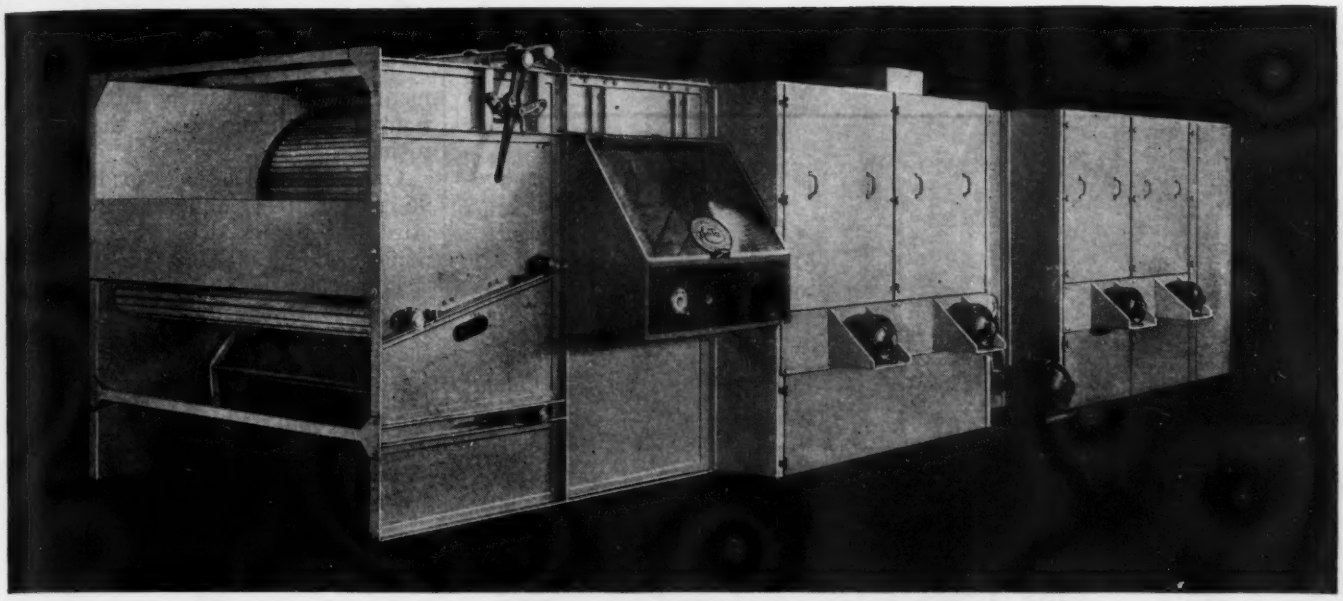
The hank roving delivered and the doffing interval, of course, affects the number of spindles an operative can handle on roving frames as does the method of creeling—whether cans of sliver or bobbins of roving. In order to help the inquirer, however, some figures on spindles and frames assigned to operators on roving frames are as follows:

Pkg. Size	Spdl.	Hk.R.	No.Fr. Run	Remarks
10x5	112	2.00	4	Clean, piece ends, doff, and creel
10x5	112	2.80	6	Clean, piece ends, doff, and creel
8x4	144	3.50	4	Same, except sometimes a creeler helps operator.

Note: The above assignments vary with local conditions and are given only for purposes of comparison.

Many mills have full-time oilers and do not require frame hands to do the oiling; primarily they creel, doff, and clean frame.

On your 12x6 frame the assign-



YOU CAN SAVE MONEY IN THE DYEHOUSE BY CONTINUOUSLY RINSING, EXTRACTING, AND DRYING RAW STOCK

The line cut at the bottom of this page shows the Hunter engineered, continuous range method of handling stock directly from the Raw Stock Dye Kettles to the Dryer discharge. The method of operation is simple:—

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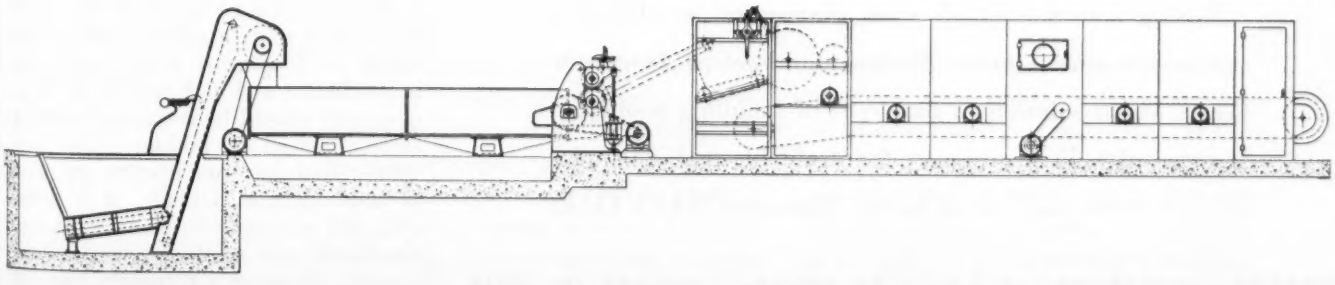

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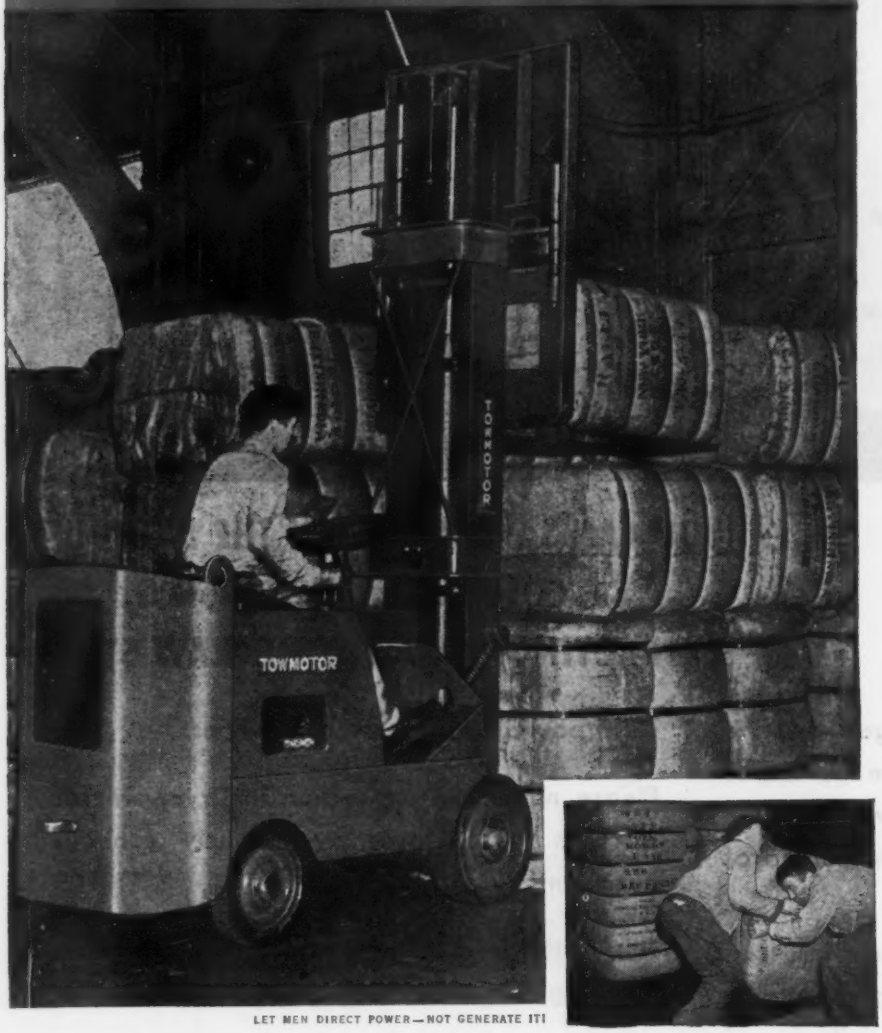

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QUESTIONS AND ANSWERS

ment would very likely be 2 or 3 frames, depending upon the hank roving.

One mill on .88 hk. made on a 96-spindle, 10x5 slubber has the operative on 3 frames, doing the creeling, doffing, and cleaning.

For cleaning a daily schedule should be set up and made a part of the frame tender's job. The cleaning should include stripping the clearers, wiping cleaner covers, roll stands, roll beam, bobbin rails, and flyers. The grade and staple of the cotton has a great deal to do with the amount of cleaning required.

About the only way to be sure a frame assignment is correct is to make time studies based on local conditions. Some mills use doffers to help frame hands doff and in such cases more frames are assigned.

Analyzing Finished Fabrics

Technical Editor:

From time to time, I have been receiving samples with T.B.L. finish in them, for analysis. I realize that the T.B.L. finish increases the weight from 10 to 15%. Consequently, I have every reason to believe that determination of the yarn count without first removing this finish will not be correct.

There has probably been in print, various methods of removing this T.B.L. finish but I have, unfortunately, missed them.

I am wondering if you can advise the writer of a fairly easy and accurate method of removing this finish, if such exists.
(9037)

The T. B. L. finish, usually made by applying a urea-formaldehyde resin to a fabric, can be removed by treating the goods with either a mineral acid or a strong alkali, such as caustic soda. Mineral acids are preferred, as a rule, because the fabrics which have received the T. B. L. treatment often contain other fibers which would be damaged were caustic soda used.

The resin can be taken off the cloth by heating it in a solution of 0.5 to 1.0% of a mineral acid, preferably hydrochloric, at 150°F to 170°F. This operation should be continued until a sample placed in boiling 5.0% sulphuric acid does not liberate an odor of formaldehyde. Usually, it is desirable and necessary to change the hydrochloric acid solution several times, in order to assure a complete removal of the resin. If the fabric does not contain cellulose acetate, wool, Aralac, or any other fiber which may be damaged by the action of the caustic soda, the sample can be placed in a 2.0 to 5.0% solution of caustic soda and heated anywhere from 180°F to the

(*Continued on page* 186)

Steady Hands . . .

View of Kettle Room at Niagara Alkali Plant

NIAGARA has greatly expanded its facilities to meet the enormous war demands for electro-chemical products. Thus as we turn to meet the growing peacetime requirements we remain "steady hands" at the job of producing materials for which Niagara has won an outstanding reputation as a quality house. This is assurance of continued good service and improved quality to those old customers who have relied upon Niagara for many years. And to new customers it means confidence in obtaining the highest standards of quality and the most experienced technical cooperation in the postwar era when electro-chemical products will be in increasing demand.

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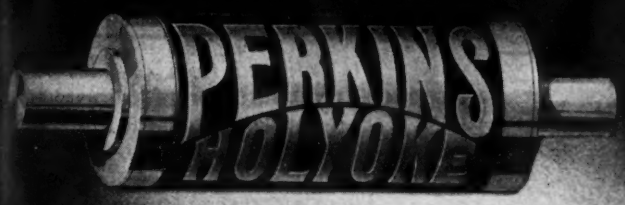

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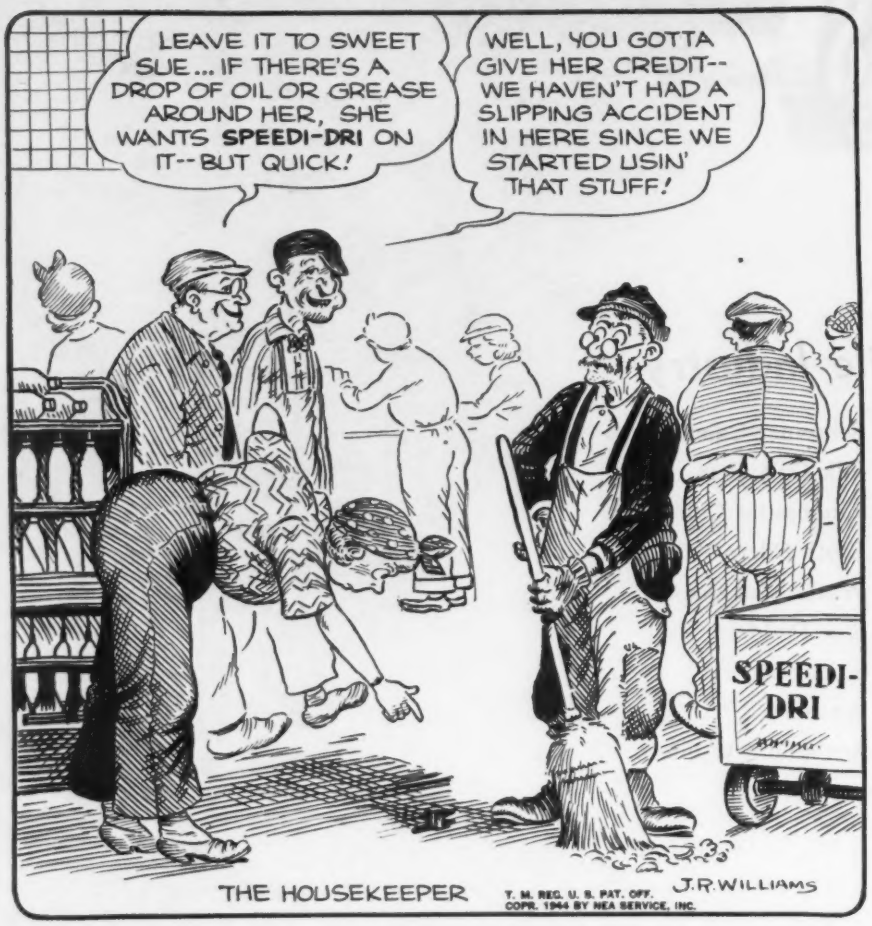
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SPEEDI·DRI
OIL AND GREASE ABSORBENT

UL

"Think First—Stop Accidents"

(*Continued from page* 182)

boil, until no odor of formaldehyde is observed. Here again, it is advisable to change the solution several times during the stripping operation.

There are several routine chemical tests for formaldehyde, which are more sensitive than the odor test, and these may be utilized if desired.

There has not been too much published regarding methods of stripping an urea-formaldehyde resin finish, and those given, to the writer's knowledge, are the ones most commonly used.

After Treatment With Glauber Salts

Technical Editor:

We would appreciate information as to whether it is necessary to after-treat on jig with glauber salt a fabric of cotton, or all spun-rayon, or a mixture of both padded with direct dyestuffs. Is there another way to replace the salting out operation?

(9039)

It is difficult to answer this inquiry in a specific manner without further information regarding the fabrics involved and the type of finish to be applied afterwards.

In general, direct colors are applied to fabrics of all-cotton construction, on either a pad or a jig, but seldom by a pad-jig procedure. Light pastel to medium shades on cotton fabrics are run on the pad, the cloth being either dropped into a box, or batched on a roll, after which they are dried on cans. In some cases, the pad is set up before a stack of cans so that the dyeing and drying is done in one continuous operation.

Heavier shades on all-cotton fabrics are usually dyed by the straight jig-procedure, color being added to the jig over several ends, usually at temperatures of 140°-160°F. The temperature is then raised to 180°-200°F., and the dyeing continued with additions of salt until the proper depth of shade is reached. Such direct dyed fabrics are usually squeezed before drying so as to eliminate excess moisture.

Fabrics containing both cotton and spun-rayon, or of all-spun construction are dyed variously, by the straight pad, in the case again, of the light pastel shades, straight jig, where the tension on the jig will not stretch the fabric too much, pad-jig, and on becks. This last method is generally used where stretching the fabric will tend to thin it out unduly.

In the pad-jig procedure, which is used to eliminate both end-to-end and selvage-to-center taper, the cloth is padded with the direct dyestuff and carried to the jibs, where it is given a

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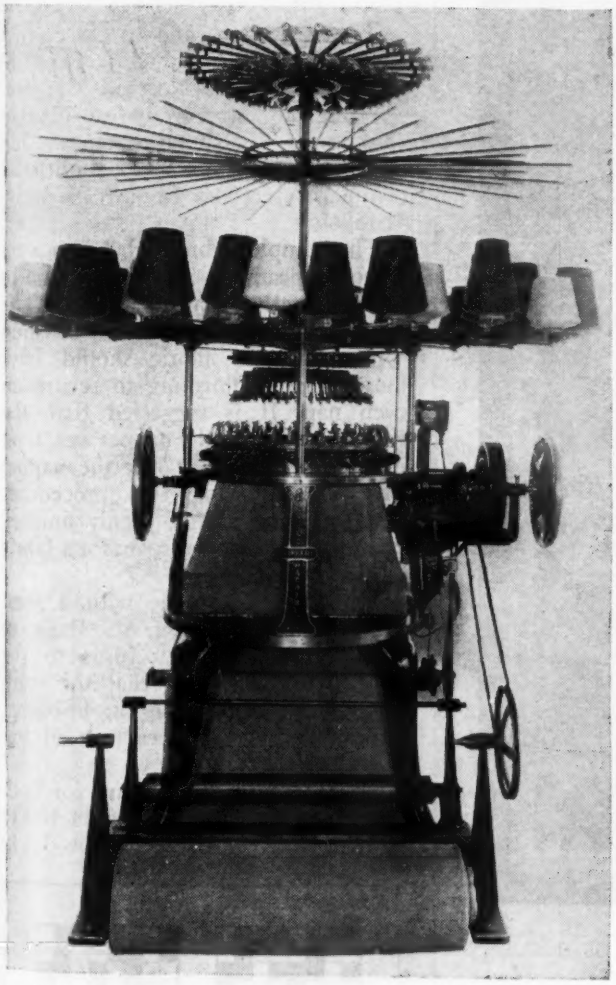

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salt rinse for several ends to further set the colors and increase the wash fastness. In some cases, on the heavier shades, a small amount of pad color is added to the jig on the first several ends, after which salt is added to the jig bath. Glauber salt or sodium sulphate can be used, but we believe many dyers find the use of a good grade of common salt or sodium chloride, just as satisfactory.

The padding of medium to heavy shades without the jig treatment, especially on mixtures of cotton and spun rayon, results in more of a cross-dye effect, poorer fastness, and unevenness of shade, since the direct colors will continue to dye after the padding operation and before drying. The jig treatment tends to level out these inequalities.

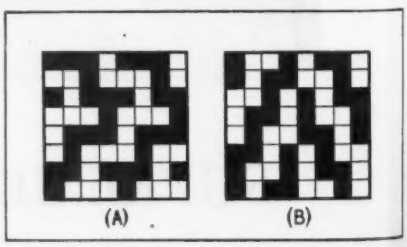
Streaky Blankets

The Question and Answer that appeared in the February issue of TEXTILE WORLD, No. (9026), and referring to streaks in a blanket causing a spotty appearance, has created much interest. Additional comments received from readers are as follows:

The sample submitted has a very ragged appearance, a condition due to finishing, rather than to weaving. The warp and filling yarns should be spun softer, and the fabric should have more work in finishing to secure an even nap. It is suggested that the goods be run over the napper wet, then dried and again run over the napper dry. By following this procedure, you will have a nice, evenly finished fabric showing a good cover for a fabric of this type.

Your cloth is made with a finer warp and a heavy filling. Also the warp yarn shows too many turns to the draw, with the result that the warp yarn does not open up in finishing, hence the spotty appearance of finished sample.

Use the same size of yarn for both warp and filling—6½ cut, giving 400 to 425 turns to the draw. Layout—1,440



Either weave A or weave B may be used for this blanket. The drawing in should be straight and on eight harnesses.

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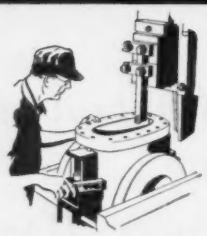
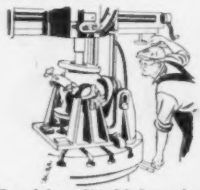


He Gives Lunkenheimer Valves Something Other Valves Haven't Got

He machines body guides down to precision tolerances, assuring a perfect guide for the disc and creating a positive center line on which all subsequent machining operations are based.



Precision Machining the Body for Seat Rings

is precision work to the "nth" degree, for this operation makes inserting the seat rings in a Lunkenheimer gate valve simply a matter of screwing them into position.

I. B. B. M. GATE VALVE Fig. 1430

● **The smooth-working efficiency and low maintenance cost of Lunkenheimer Valves were not "made in a day". Behind this superior performance and economy lies long experience, and an ideal of precision which guides every operation from design to final assembly.**

Lunkenheimer Valves have a streamlined simplicity of design . . . a minimum of working parts, each part of extra strength, correctly proportioned and perfectly balanced. This assures longer life with the least trouble and maintenance expense.

A Lunkenheimer Distributor is located near you, equipped and ready at all times to help you solve problems of maintenance or operation.

ESTABLISHED 1862

THE LUNKENHEIMER CO.

"QUALITY"

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Bronze, Iron, Steel and Corrosion Resistant Alloy Valves, 125 to 2500 Lb. S.P.; Boiler Mountings, Lubricating Devices, Aircraft Fittings

LUNKENHEIMER VALVES

ends, 9½ reed, 76 in. in width, and 24 picks at loom, using either weave shown. The fabric will finish 60x84, 3¾ lb. With the proper handling in finishing, you will secure a nicely finished cloth, showing a good, even cover.

Another of our contributors states:

A loose reed, early closing of the harness motion, loose crank arms, faulty let off or take up motion in the weaving could cause filling streaks.

As for excessive twist, it is possible that it may cause the fabric to have a thready appearance which may cause it to look spotty. If the fabric was fulled for a longer period of time to give it more cover and given a little more napping, then the streaks would disappear.

Should These Spinning Rings Be Discarded?

Technical Editor:

Will you please examine the two enclosed spinning rings and advise me whether or not you believe they are sufficiently worn to justify being discarded.

(9036)

Examination of the two sample rings prove beyond a doubt that they should be discarded as they have more than served a useful life. The two sample rings have been turned and are badly worn, both on the flanges and on the web. It is immediately apparent that the web is badly grooved on the outside because of the use of the wrong circle traveler. In addition to this, the inside edge of the flanges is badly worn and wavy. Both of these conditions make it unlikely that the spinner using these rings could get satisfactory work unless he is making very low-grade yarn. Since the rings have already been turned and worn on both sides and since nothing can be done to renovate them for further use, it is suggested that the plant having them purchase new rings at the earliest date possible. Under present conditions they will be fortunate to get new rings in six months to a year in this country.

It is suggested that when new rings are installed the condition of the ring holders be looked into to see that they do not damage one flange of the double-flange ring, if this is the type of ring purchased. Another point that is well worth while is to be sure not to use the wrong circle traveler for the yarn being spun so as to minimize the wear on the web. The frame should be overhauled, lined and leveled, the spindles plumbed, and thread guides set before putting in new rings.

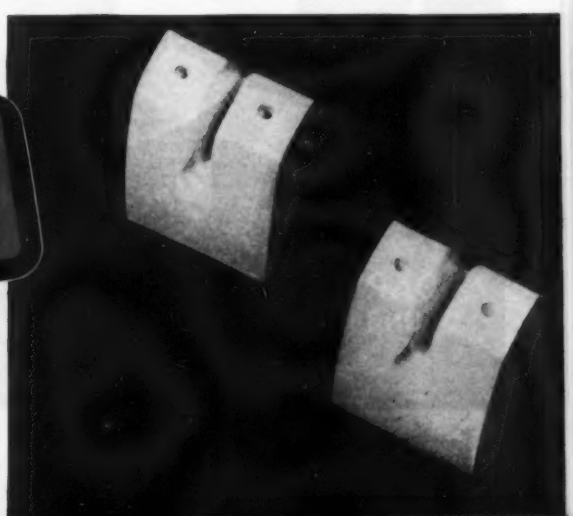
FAITHFUL SERVICE FOR A LONG TIME

ALSIMAG Patented Thread Guides deliver extremely long, uninterrupted service on the toughest yarns. This is due to the fact that ALSIMAG is a hard (8 on Mohs' scale), tough, homogeneous material from surface to core. There is no glaze to cut through—interrupting production, damaging material. The jewel-like finish is achieved by polishing. Thread action maintains the original polish.

ALSIMAG Guides are precision-made to your individual requirements. They pay for themselves over and over again in years of faithful service. Write today for literature. Sample test rods furnished without obligation.

NO GLAZE TO WEAR THROUGH

Like sterling silver, ALSIMAG *is the same material from surface to core. There is no glaze to cut through—no point of sudden failure. Thread action maintains the original high polish.*



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...O has been awarded for the fifth ...the Army-Navy "E" Award for ...nued excellence in quantity and ...y of essential war production.

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PATENTED THREAD GUIDES

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Cotton Spinning Fundamentals

(*Continued from page 115*)

conditions, so that the reports will be reliable.

On the other hand, single-yarn twist testing is so highly technical that it should be undertaken only if the mill has the proper equipment and trained personnel. Even experts admit the likelihood of errors in this complicated operation.

We believe the checking of ends down in spinning can result in much good, if the tests are reliable and if they are followed up by proper action. Although, in the past, young men "working through the mill" have done most of the checking of ends down, we see no reason why girls or young women could not do this work very effectively. An experienced spinner would have the advantage of knowing why most of the ends come down. If such a person is not available, it is possible to train new hands to do this. They should first be taught the technic of checking the ends down; and, possibly, the first time over the spinning room, they should simply record the ends down and learn to calculate the number of ends down per 1,000 spindles per hour.

If the operator is unusually quick to learn, she will probably have learned to get up ends by this time and will have learned something about why ends come down. If she has not learned these things, she should be put with a good spinner for a few days and taught to spin; and during this time, she should pick up enough information to be able to start checking ends down and listing their probable causes.

The first of these reports made out should not be taken too seriously; but within a very few weeks, the reports should be considered reliable and steps should be taken to correct remediable defects.

While the form illustrated is only a suggestion and subject to modification to suit the requirements of the individual mill, it is, we think, fairly comprehensive; and it will furnish a comparative report of the performance of each frame and will enable the overseer of spinning to give a direct and accurate answer to the oft-repeated question, "How is your spinning running?"

By having the operative record the number of ends down each hour, it may be possible to determine whether the number of ends down follow any particular pattern, such as during the period of picking rolls, changing travelers, etc. For the report to be worth anything, the figures must be com-

FROM *Spinning Wheels* TO ?

The textile industry did not follow the vanguard of progress in early America . . . it was a pioneer. It was a part of the great surge that pushed frontiers before it. From the spinning wheel that occupied a corner in the living room, it has developed into one of the country's leading industries. Today, while supplying the enormous needs of our fighting forces, the industry is anticipating the frontiers of tomorrow. It is thinking in terms of supply; raw materials, power, labor and transportation.

Location of many textile plants in the territory served by the Norfolk and Western was the result of critical weighing of plus factors. In this territory, the textile industry has found ideal mill sites . . . with all out doors for expansion. Plus factors include: An unexcelled transportation system; raw materials in abundance; mild climate; ample water; intelligent labor, both skilled and unskilled; bituminous coal; and ready access to the year-round, ice-free port of Norfolk, Va.

Industrial specialists of the N. & W. will gladly furnish specific data on any section served by the railway.

Norfolk and Western
RAILWAY
PRECISION TRANSPORTATION

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Call Ryerson for any kind, shape or size of steel you need. Steel for manufacturing, maintenance or construction ...all products are available for immediate shipment from any one of the ten convenient Ryerson Steel-Service Plants. Ask for a stock list...your guide to steel.

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HIGH SPEED

If the road is rough, high speed cannot be maintained for long.

For the same reason, Travelers cannot maintain the same high speed on worn or wavy rings.

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SOUTHWEST SUPPLY CO., Box 1487, Dallas, Texas

STERLING RING TRAVELER CO.
FALL RIVER, MASS.

parative; and, since it is not always possible for each test to be of the same length of time, by calculating the number of ends down per 1,000 spdl.-hr., the results will all be on the same basis.

The old adage, "The proof of the pudding is in the eating," applies, in a modified sense, to spinning. The quality of the yarn produced by the spinning room is reflected in the production of the spoolers or winders, the warpers, twisters, and looms. The quality of the yarn definitely affects the quality of the finished product and thus affects the relations between the mill and its customers. In the last analysis, the yarn must be such that it will meet competition and meet the customer's requirements. It is the hope of the writer that the suggestions contained in this article will help some mill to attain these objectives.

Card-Room Control

(*Continued from page* 119)

yarn counts to staple length, see also Table I.

This table is only a rough guide in selecting staple of approximate suitable length for various yarn counts. Wide variation from this list will be found in actual mill practice. Sheeting mills in which warp strength is of great importance may use a staple of 1-in. to $1\frac{1}{16}$-in. for their 20s warp yarn. Medical gauze mills where warp strength of the finished products is of less importance may use $\frac{31}{32}$-in. for their 30s warp yarn. The nature and use of the finished product must be considered when selecting staple lengths.

The approximate strength that may be expected on certain yarn numbers from cotton of various staple lengths can be obtained from Table II.

STAPLE LENGTH. It is generally recognized that the length of staple is a better indicator of the value of cotton than its grade. There are two general classifications: long staple and short staple. Commonly at the present time, the term "short staple" applies to any cotton under $1\frac{1}{8}$ in. in staple length.

The government standard forms for staple length define the actual length of typical staples with no consideration of any quality other than length. The $\frac{1}{32}$-in. measurement is considered to be the limit of exact determination and no smaller fraction is recognized. In the trade, however the fraction $\frac{1}{32}$-in. is seldom quoted. Cotton $1\frac{1}{32}$ in. in length would be described as 1-in. to $1\frac{1}{16}$-in. and $1\frac{3}{32}$-in. cotton would be classified as having $1\frac{1}{16}$-in. to $1\frac{1}{8}$-in. staple.

These government standards are to

the Lady SUSPECTS

The lovely lady who wears this bewitching *sheer black* probably suspects some wizardry on the part of the designer who created it. But—he knows better! He knows he could never have achieved the style appeal that sold it unless the material had been properly processed.

That's why so many of America's leading mills, converters, finishers and dyers have turned to Colgate-Palmolive-Peet for high-quality wetting, fulling, scouring and dispersing agents.

There is a C. P. P. soap or synthetic detergent for every fabric—for every processing problem. Ask your local Colgate-Palmolive-Peet representative for detailed information on the full line of C. P. P. processing agents made specially for the textile industry. Or, write to our Industrial Department at Jersey City 2, New Jersey.

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TO OBTAIN *Required* GAS PRESSURES

If you are interested in a gas pump that will keep pressures where you want them — and still be economical in power and maintenance costs — you should have a copy of Bulletin 31-B-15. A copy is waiting for your request.

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be considered representative of length of sample only under relative humidity of 65% at 70°F. This consideration is very important, because if cotton is allowed to become excessively dry, it will show a shrinkage of from $\frac{33}{64}$-in. to $\frac{32}{64}$-in. from the length measured under standard humidity conditions.

Every specimen of cotton contains fibers of varying lengths. Cotton classified as 1-in. staple may contain fibers $1\frac{5}{64}$-in. maximum length down to $\frac{1}{4}$-in., or less, minimum length. Skill, judgment, and experience are required to draw-measure properly the representative fibers of cotton samples. Many experts will differ widely in their exact measurement of selected staple. Their different methods of pulling, drawing, discarding, blocking, and measuring will account for this variance.

SHORT STAPLE. Proportion of short staple is no doubt the most important factor in the variation of spinning value of cotton of the same classified length. The cotton classer considers only the body bulk of the predominant fiber length when measuring staple. The average length or the proportion of short fiber is seldom noted.

Laboratory tests show the following two extremes from many samples of 1-in. staple:

Sample	*1-in. and up*	*$\frac{7}{8}$ to 1*	*$\frac{3}{4}$ or less*
1	50%	35%	15%
2	14%	63%	23%

Both of these samples were of 1-in. classified length of approximately the same character, excepting the uniformity of fiber length. Cotton from sample 2 would not be expected to produce yarn of the same strength as that from sample 1.

The mean fiber length has been shown to be a better indicator of the potential yarn-strength value of cotton than its classified length. The mean fiber length of 1-in. cotton can vary from .76 in. to .93 in. in different specimens. The strength of the yarn will be closely proportional to the mean fiber length of the cotton from which it is spun. An increase in the proportion of short fibers will not only directly lower the yarn strength, but also will increase waste loss in processing.

Much grief in roving and spinning processes can be anticipated and partly prevented by prompt detection and rejection of bales showing abnormal amounts of short fiber or by the proper mixing of these bales with normal bales showing a higher proportion of longer fibers.

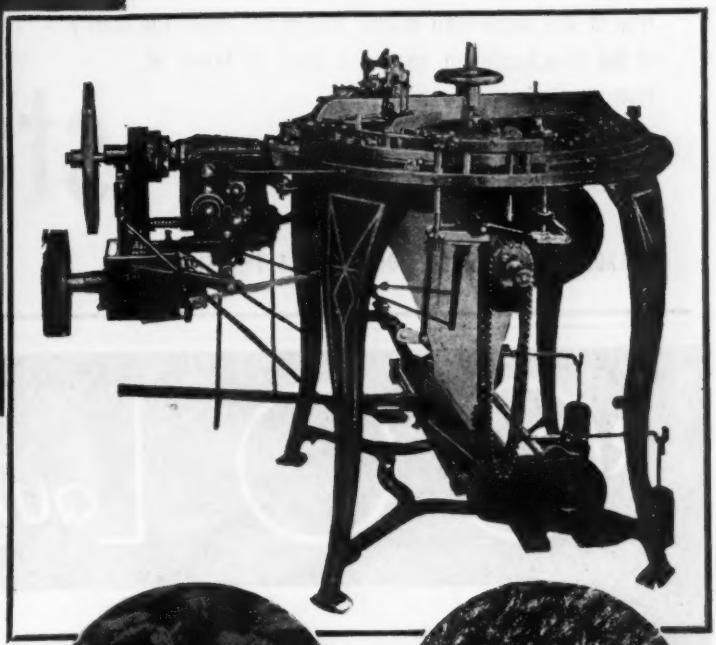
STAPLE QUALITY. The elements of grade-quality are character, color,

LEIGHTON-KNIT

means

"Everything you want in a Sweater"

COARSE OR *fine* STITCHES ON THE SAME MACHINE...



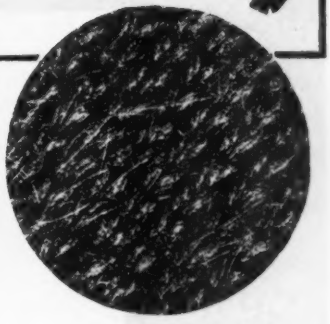
LEIGHTON stitches pass down over the exterior of the cylinder. The face of the fabric is in full view — a distinctive advantage on plaited fabrics.

Leighton eliminates sharp bends—you knit soft spun yarns with less end breakage.

On a Leighton each needle nearly completes its stitch before the next one starts. The diverging needles give the yarn more room —and allow the use of heavy or fine yarns on the same gauge machine.

Yes, sir—it's flexibility in knitting you want TODAY — which means LEIGHTON.

COARSE STITCH
2½-CUT



FINE STITCH
10-CUT

Built Right —— Knits Right

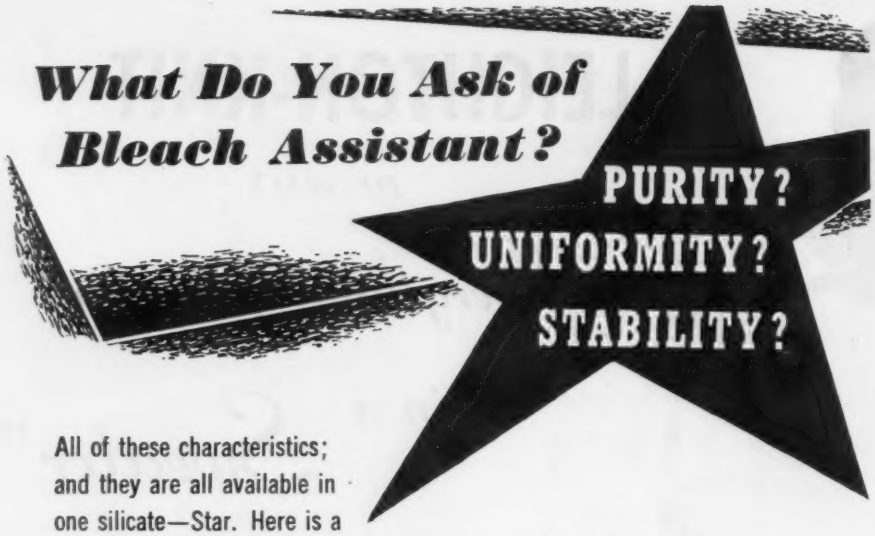
LEIGHTON MACHINE COMPANY

ESTABLISHED—1873

LEIGHTON

MANCHESTER NEW HAMPSHIRE

INCORPORATED—1894



All of these characteristics; and they are all available in one silicate—Star. Here is a stabilizer and neutralizing agent for your peroxide baths, that is dependable, whether you use batch or continuous process.

Star is specially made to do the job. It is brilliantly clear and completely free of any suspended matter that might affect the clarity of the bleach solution, so that it does not break at high dilutions.

For uniform high quality bleaching results, specify Star Silicate.

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Tank Builders for over 80 Years

R. D. COLE MFG. CO.
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foreign matter, and preparation. The classer usually takes in consideration, at first glance, color and leaf on a basis of normal preparation. If a closer inspection shows poor preparation of sample, it is graded lower accordingly.

White, broadly speaking, includes creamy, bright, and bloomy, free from any discoloration. In the lower grades, the brightness is less pronounced, becoming dead white and dull—sometimes gray. Strict middling, middling, and strict low middling admit some boll-weevil spots. Low middling contains heavier spotted discolorations. Strict good ordinary and good ordinary grades permit both yellow and gray discoloration. Little consideration need be given to color in low-grade cotton. Colors are not sharply defined for these grades. Stained and lower grades are often sold on sample or type with no color designation.

Bright color partly compensates for excessive leaf and foreign matter. Goods color and cleanliness may offset rough ginning. Smooth preparation may offset dull color and leafiness.

Leaf, shale, motes, sand, and dust increase in each successive lower grade. A large part of this foreign matter is eliminated in the processes of manufacture. More foreign matter means less usable cotton and greater waste loss in working. Government tests made on the nine grades of cotton show the total visible waste increases from 5.50% on middling fair grade to 14.44% on good ordinary grade.

There are no established standards for character of cotton with which to compare samples. Strength, body, uniformity, and smoothness are judged by the drag, break, and feel of the staple in the hands. It takes long training and experience to judge these qualities accurately.

Monofilament Yarns

(*Continued from page 127*)

20 ends per inch, one per dent, then the leasing reed should be exactly the same.

Although a creeping, slow speed should be used on the sizer or slasher, it is surprising how fast a 3,000-yd. warp can be made. Warp after warp can be run through knot-free. When bobbins on the creel are about run out, it is possible to gage yardage and to change the entire creel near a full-length warp. This eliminates knots.

QUILL PIECE BOBBINS. Bobbins removed can be sent to the quilling department for filling. It is a tedious job to run "skinnies" onto quills, and the

Announcing a change in name (and in name only)

SCOTT TESTERS, INC.

formerly Henry L. Scott Co.

This new name is adopted as more descriptive of the nature of our business, which since 1899 has been the manufacture of physical testing apparatus that has become literally "Standard of the World."

SCOTT TESTERS, INC., PROVIDENCE, R. I.

Send for copy of this new bulletin 3533 which gives complete construction details and ratings.

New— fine Performance with Economy—

The Type "B" Axial Flow Fan shown here is a new fan, developed by "Buffalo" engineers from experience gained in the production and testing of thousands of Axial Flow Fans.

It has the famous Buffalo "Limit-Load" horsepower characteristic; it's quiet, it's efficient. It is an economical fan to buy and to operate.

Available in direct-connected and belted models in a wide range of sizes. If your plans call for Axial type fans — you can use Type "B" to advantage.

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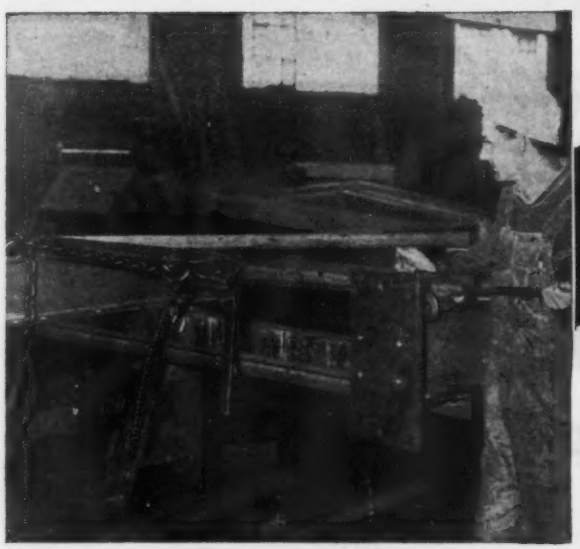
Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

ARMY E NAVY

"Buffalo" FIRST FOR FANS

TYPE "B"

Axial Flow Fans



A HOIST TO FIT THE JOB

Coffing "Safety-Pull" ratchet lever hoist pulling I beams together for lining up holes to bolt bracing cross member in place.

To do the toughest jobs in a structural steel plant and do it quickly and safely a hoist or "puller" must be able to take brutal punishment hour after hour and for economy must give uninterrupted service month after month.

That is the job for a Coffing "Safety-Pull" ratchet lever hoist. The dual purpose hoist or puller with safety valve handle.

Write for Catalog No. GG-6

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RATCHET LEVER HOISTS - SPUR GEAR HOISTS - ELECTRIC HOISTS
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● Opportunity knocks every day in the year. But you can take advantage of it only if you are ready. Our service keeps you prepared by providing you with constantly adequate working capital. It also protects you against credit losses. You owe it to yourself and your business to investigate the benefits of our service. No obligation, of course.

MEINHARD, GREEFF & CO., Inc.

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FACTORING FOUNDED ON SERVICE

quiller hand should be compensated for it. These short bobbins are run on quillers especially to eliminate warp knots.

It may require a run of several warps before the sizing tender gets the feel of the proper stretch; but, once attained, the warping (or rather beaming) of monofilament yarns through the sizer becomes just another ordinary job.

The full beams are now ready for the twisting department. The very fine gages can be knotted, but not the heavier yarns. The "wire" monofilament yarns must be entered by hand. This offers no serious difficulties, for a set-up is easy and warps can often be entered as fast as can be done mechanically. If the finer yarns are reeded, they can usually be chopped into the reed with bone or steel reed knives. If heavier yarns are used, they are best hooked in with a short steel blade.

Drop-wires should be sufficiently heavy to drag the "wire" end out of the shed and allow contact. Wires can be placed on within half an hour and should be dropped on at the loom. An electric stop motion is best for plastic-coated yarns, as the resin sifting into mechanical types will clog the movement and prevent knocking off.

On a four-shaft harness, a four-bank drop is preferred. This allows a slight rocking motion at the wires, and loose resin will usually sift to the floor.

After a warp has emptied, the run-out harness set is usually removed and all warp yarn cut out. The harness is washed in a solvent and scrubbed, if necessary, to remove coated resin. The harness is then ready for a re-entry.

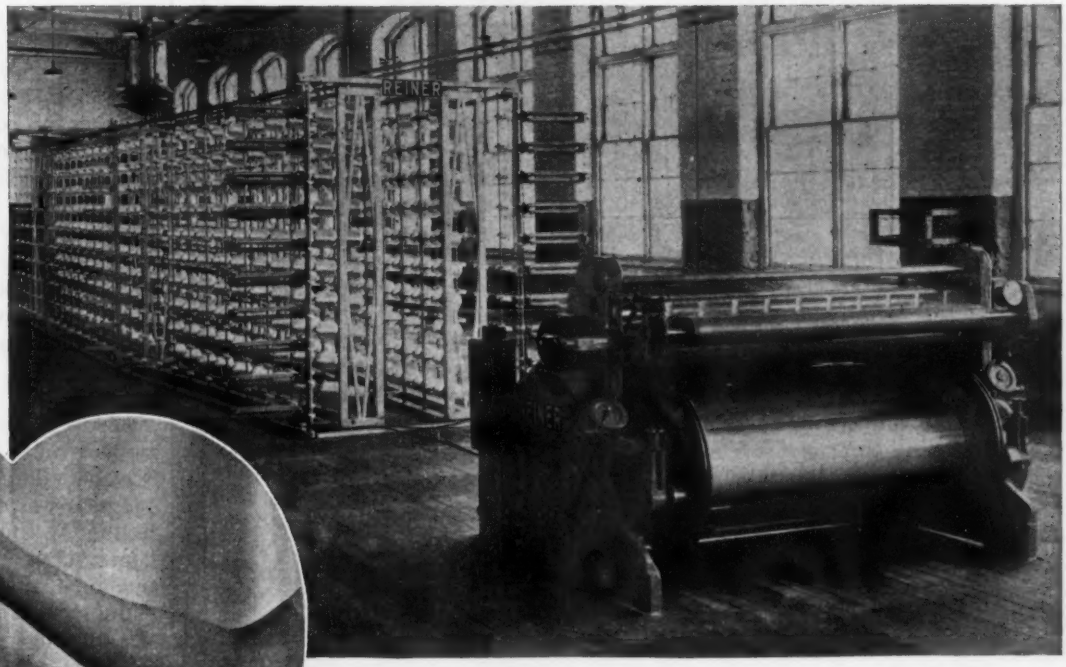
The usual plastic yarns are not suitable for automatic quilling. The heavier gages soon ruin the scissors. The yarn is often too harsh for the mechanism and guides; and when the scissors are opened as the yarn is pulled into place by the finger, they soon dull and fail to cut properly.

The best method of running this yarn is on non-automatic machines. When the bobbin is full and the spindle stopped, the quiller must doff the bobbin, cut the yarn, and place on a new bobbin. The filled bobbin can be wrapped or covered with a paper cone. The yarn end can also be given a half-hitch near the center of the quill to prevent unraveling.

When quilling from partly-filled bobbins, the best plan would be to give each operator a side of ten spindles and let her do the best she can. Do away with all rolling and spring devices for tensions, except the use of turning disks if a disk-type tension is used. The entire doffing cycle will become smooth if the quiller is allowed to find a working groove.

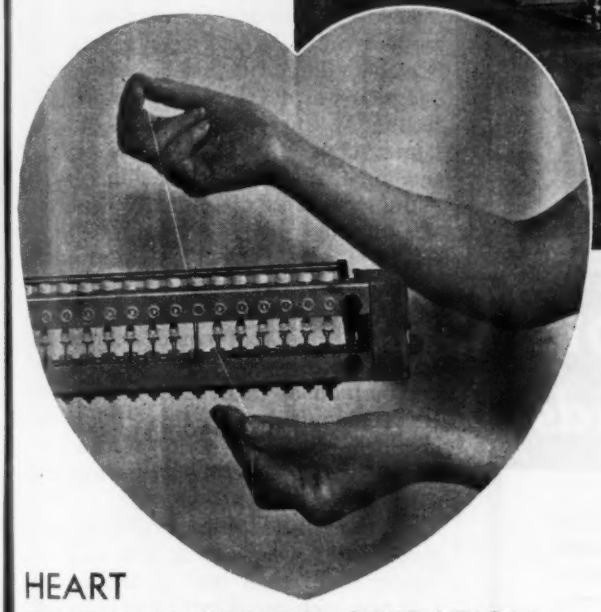
NOW AVAILABLE!

The Super-Efficient REINER WARPER and CREEL—



Installations like that shown above, used for Nylon tire cord, have contributed greatly to war production speed.

Designed for speed, this REINER WARPER and CREEL have these features for efficiency and speed:



HEART
OF THE WARPING OPERATION

This Mercury Thread Stop Motion is not subject to corrosion or affected by lint—important for safe high speed warping. In a class by itself as a stop motion—dependable, efficient and more effective. This motion can be applied to any standard creel.

BEAMER FEATURES

(1) Constant thread speed.
(2) Easy Doffing.
(3) Direct Beam Drive, instead of friction drive.
(4) Slow Starting Speed, independent of warping speed.
(5) Controlled hardness or softness of the warp beam.

CREEL FEATURES

(1) Overhead Magazine Delivery.
(2) All Steel Construction.
(3) Suitable for Rayon or Cotton Cones.
(4) Movable Tension Gage for Balloon Control, for different size packages.

THE REINER LINE OF TEXTILE EQUIPMENT

For over forty years it represented the highest standards of quality and performance. Included in the line are the following:

High Speed Tricot Knitting Machines
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Full Fashioned Hosiery Machines
Automatic Heelers for Hosiery Machines
High Speed Warping Machines (full width and sectional)
Magazine Creels
Jack Creels
Thread Tensions (counterbalanced and disc)
Thread Stop Motions
Automatic Embroidery Machines (10 and 15 yard lengths)
Automatic Bobbin Winding Machines
Quilting Machines
Card Punching Machines
Repeating Machines

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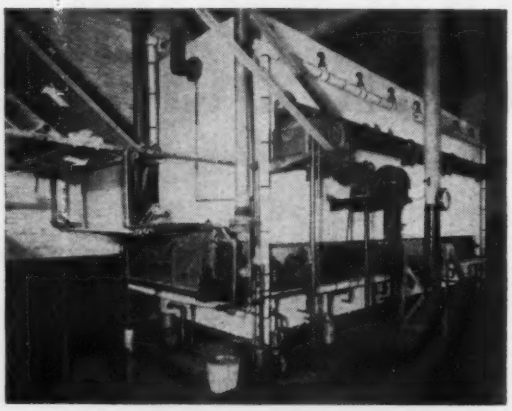
Union 7-0502—7-0503—7-0504—7-0505

NEBUTTCO AGERS NEBUTTCO

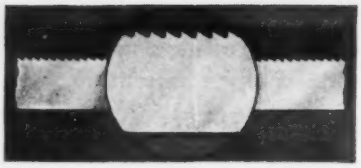


The New England Butt Ager, with its specially designed ball bearing housings, rolls, drive, and entering chamber, permits the finishing of either light or heavy goods with equal ease. Elimination of damage from condensation, and low steam consumption are features of our design. Space does not permit detailed description. Why not write us for complete data: We feel sure that the details concerning the New England Butt Ager will interest you.

NEW ENGLAND BUTT COMPANY

PROVIDENCE 7, R. I.

To Clean and Reseat Slots
in Sinker and Divider Heads



Thomas & Skinner Slot Cutter

No need to send sinker and divider heads back to factory when you have Thomas & Skinner Slot Cutters. This simple and valuable tool enables you to clean out and reseat slots right *in your own mill.* And you can keep a machine in operation—with only the head you are working on out of production for a few hours.

Thomas & Skinner Slot Cutters are made from high grade tool steel, tempered and ground to exact gauge of the sinker. Comes in a leather carrying case. Every fixer should carry one. It is necessary to send sample sinker when ordering slot cutter.

Other Products

Other quality products which we manufacture for full-fashioned hosiery mills include Jacks, Jack Axles, Course Markers, Narrowing Plungers, Narrowing Chain, Friction Springs, Snapper Springs, Magnetized Sinker Hooks, Cams, Running-in Machines.

Reconditioning Service

We restore worn cams, gears, rollers, and many other textile machine parts to their original size and shape. Satisfaction guaranteed.

Thomas & Skinner Steel Products Co.

1119 EAST 23rd STREET • INDIANAPOLIS 5, INDIANA

Warp Knitting

(*Continued from page* 108)

for women's gloves at present, but there seem to be excellent possibilities for its development in other fields. Next to the regular tricot machine, the simplex machine appears to have the greatest potentialilties.

7. The cut-presser machine, a standard tricot machine except for the needle-pressing arrangement. The presser bar is notched at predetermined intervals. This causes certain needles to load or tuck for a limited number of courses, after which the presser bar moves laterally so that the tucking needles will knit freely, and the needles which were previously knitting freely will now tuck.

EARLY MACHINES. The first power-operated tricot machines probably ran considerably less than 100 courses per minute. The North American tricot industry was supplied almost exclusively by British and German machine builders until World War I, when a sizeable domestic machine-building program was developed in the United States. At this point, a speed of 200 courses per minute was considered phenomenal, and most machines were running at a rate of 140 to 160 courses per minute.

Machinery development continued in Europe, especially in Germany, and by the middle 1930's tricot machines were available that could operate at speeds of 300 courses or better. In the opinion of many people close to tricot manufacturing, this 100% increase in the productivity of the machine in a span of ten years marked a turning point.

A domestic machine-building program was revived which was able to supply more than half of the nearly 600 new high-speed machines installed in the last ten years. Of the 700-odd old-type machines, perhaps one-third were rebuilt during this period to make possible operation at speeds of 250 courses or faster. On the other hand some of the new equipment was stepped up to 375 and in a few isolated cases to 400 courses. The progress being made indicates that further increases in machine speeds, as well as more efficient methods of operation, may be expected.

Bright prospects for tricot knitting are indicated on the basis of these two salient points: (1) The textile trades will have available one of the fastest known methods of converting yarn into fabric. (2) The versatility of the machine, when understood and exploited by the fabric designer, should open up many new and different outlets for tricot merchandise.

A copy of the "Unbrako" Screw Catalog is yours for the asking.

Knurling of Socket Screws originated with "Unbrako" years ago.

"UNBRAKO" Welt-Bar Screws

Uniformly strong and accurate, "Unbrako" Welt Bar Screws. They already insure extra satisfaction in many mills. Ask for samples.

SELF-LOCKING HOLLOW SET SCREWS

with the KNURLED points

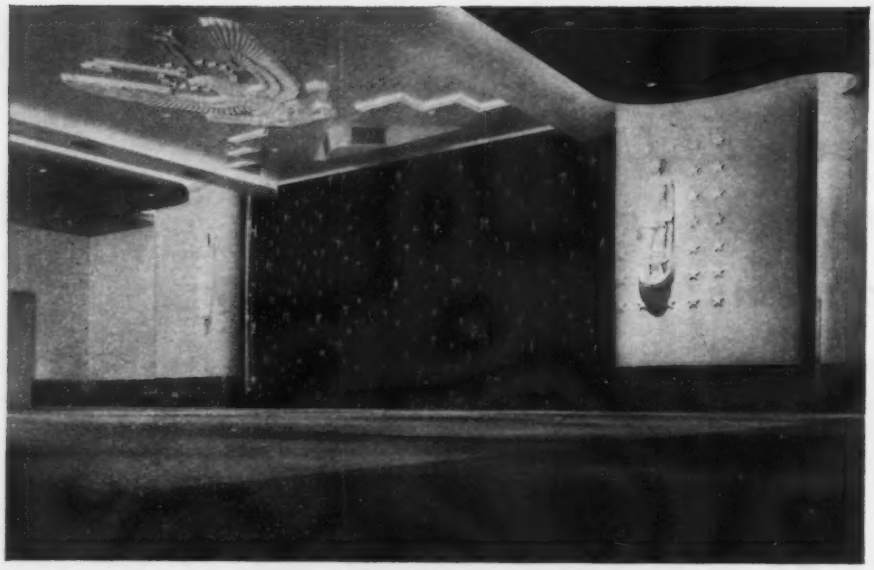
"Unbrako" Self-Lockers cut down maintenance troubles because they stay tight where they are put—no amount of vibration will shake them loose. Tightened like ordinary set screws, the knurls of their cup points dig in and hold tight. Yet they can easily be removed with a wrench and used over and over again, without impairment to their self-locking ability.

If you install "Unbrako" Self-Lockers on your looms and other machinery, you will be giving yourself an inexpensive insurance against breakdowns caused by loose set screws.

OVER 40 YEARS IN BUSINESS

STANDARD PRESSED STEEL CO.

JENKINTOWN, PENNA., BOX 571 · BRANCHES: BOSTON · DETROIT · INDIANAPOLIS · CHICAGO · ST. LOUIS · SAN FRANCISCO



MADE FROM COTTON YARNS
PACKAGE DYED
BY GLOBE

The gorgeous star spangled curtains of the Grand Ball Room in the famous Hotel Statler, Washington, D. C. are made from fabric furnished by the Moss-Rose Manufacturing Company, at Philadelphia, Pa.

The cotton yarns in these curtains were package dyed by Globe.

Globe DYE WORKS CO.

FRANKFORD, PHILADELPHIA 24, PA.

Cheers for the CHAMP!

From coast to coast, leading mill-owners and chemists give rousing cheers for DIASTAFOR de-sizing agent – the champ in its field. They cheer its dependable performance, satisfactory results and superb high quality.

Try DIASTAFOR for finishing cottons, rayons and mixed goods. See how it makes them smooth, supple and flawless. You'll understand then why DIASTAFOR is the preferred de-sizing agent throughout the nation.

For further information, see our technical man or write to—

FLEISCHMANN'S DIASTAFOR
Diastafor Division
Standard Brands
INCORPORATED
595 Madison Ave., New York 22, N. Y.

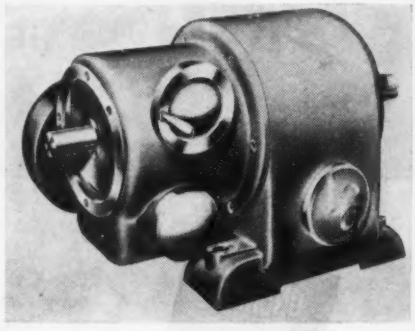
DIASTAFOR
37 Years of
Satisfactory Results

Textile Equipment News

(Continued from page 154)

pump equipment, the new type of drive promises to be a large factor in the revitalizing of old equipment.

Differing from conventional types of variable speed units, the Lombard variable speed drive uses the V-belt as a control medium only, rather than for both drive and control; primary speed reduction is accomplished by conventional gearing methods. Through this new gearing arrangement 90% of the power goes through convention gears while only 10% passes through the V-belt—a minimum load which avoids the slippage so common with other power transmissions. The lower gear ratio also affords finer hairline control, insuring peak production speeds. Low maintenance is made possible as the easily accessible V-belt is the only part likely to need replacement over a long period of time. The efficiency at low speeds is equal to, if not higher than, the efficiencies usually attained. Having the variable speed output shaft furnished concentric with the motor shaft gives it the advantage of a direct line drive. Remote control is also available, with horizontal split casings optional.



Variable speed drive capable of handling high horsepower outputs. (Lombard Governor)

Electric Speed Indicator

An accurate, low-cost electric speed indicator, developed by the Reliance Electric & Engineering Co., Cleveland, may be used to determine and to set proper operating speeds on machines so equipped.

The electric speed indicator, which gives accurate readings of speeds from 100 r.p.m. to 5,000 r.p.m., consists of two units. The pick-up unit, a miniature six-pole alternator with a permanent magnet rotor, is mounted on the shaft whose speed is to be measured. The indicator, a permanent magnet, moving-coil type, meters the pick-up output on a $3\frac{3}{4}$-in. scale which covers a 95° arc. The resistance of the indicator has been made sufficiently high, so that the size or length of the

WILDMAN MULTIPLE FEED RIB MACHINE

WHEN THIS *16-FEED* MACHINE

REPLACES YOUR *8-FEED* MACHINE YOU CAN

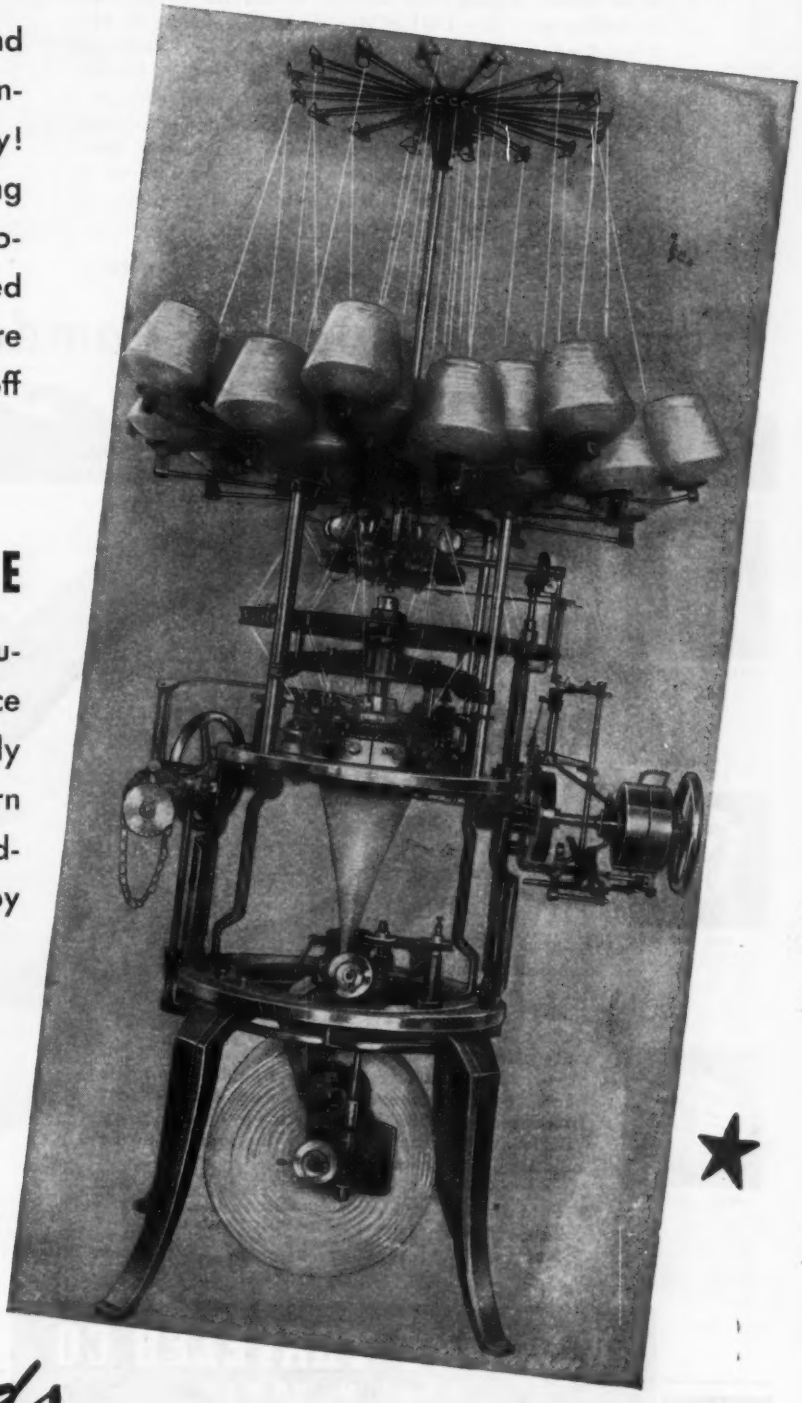
DOUBLE PRODUCTION

Factory floor space and manpower—what giants of potential production they mean today! Well, here's a 16-feed knitting machine that will double the production you get from your 8-feed machine using only 30% more power—and here's the pay-off . . . it will do it

ON THE

SAME FLOOR SPACE

that the old machine now occupies. That's utilizing floor space and saving man-hours in a truly modern way. Write today to learn the many other operational advantages and savings offered by this machine.



WILDMAN

MFG. CO., NORRISTOWN, PA.

Buy War Bonds

Fits Army Fabrics for Global War . .

Fabrics that must meet the rigors of today's world-wide war, need every good characteristic that you can impart.

DRUMMOND SOAP

Gives fabrics a good start on their career for Army, Navy or civilian use. For DRUMMOND Soap contains no filler of any kind . . . It's a high-body product of low alkali content . . . It has a high binding quality that results in minimum flocking . . . Saves on steam and water because it rinses easily and completely . . . Better fulling and scouring . . . Leaves fabric perfectly clean with softest feel, better hand, brighter colors and whiter whites . . . Want to try it? Just write us today for a free working sample and test DRUMMOND Soap on your own goods.

Don't Sell America Short—BUY MORE BONDS

Standard Soap Co. of Camden

205 South 2nd St.
CAMDEN, N. J.

G. TANGUAY
281 Harris Ave., Woonsocket, R. I.

PERFECT BALANCE Weighs same on both sides. Straight part of shank is in center of gravity. Distributes lubricant and wears evenly. Will not pivot twisting self and rayon.

THE NE-BOW Prevents yarn ends flying out, provides ample head-room for threading—prevents binding on ring. Note "bend inward" at top of horn.

HEAT CONTROL for better metal—dominates "U.S." production! Carburizing and tempering ovens are electrically controlled through pyrometers for better performance.

ARE YOU LUCKY WITH RING TRAVELERS?

Congratulations! Some mills have PLENTY of trouble . . . but NOT the mills using the "U. S." Brand. If you have traveler trouble or want to avoid it . . . investigate precision-made "U.S." Travelers, either standard or made to order. You'll quickly find why in so many of the leading textile mills it's "U. S." every time!

● **Sold Under These Trade Names**

Bowen Round Point Travelers
Bowen Square Point Travelers
Bowen Improved Vertical Bronze
Bowen Patented Bevel Edge
Bowen Flat Oval and Round Wire Traveler
Bowen Patented Ne-Bow Vertical
Bowen Patented Vertical Offset

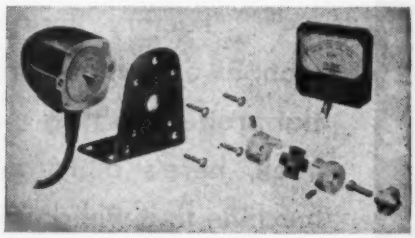
U.S. RING TRAVELER CO

AMOS M. BOWEN
President and Treasurer

PROVIDENCE RHODE ISLAND

leads connecting the units will have no effect on accuracy and the indicator may be located at any distance from the pick-up unit. The indicator is not affected by other magnetic material, and there is no loss of accuracy due to length of service.

Instantaneous and continuous speed indication is independent of the direction of rotation of the shaft. Indicators are provided for full-scale deflection corresponding to 1,500; 2,000; 2,500; 3,000; and 5,000 r.p.m. Special scales are available to read in other units, such as feet per minute, and in process cycles of varying times.

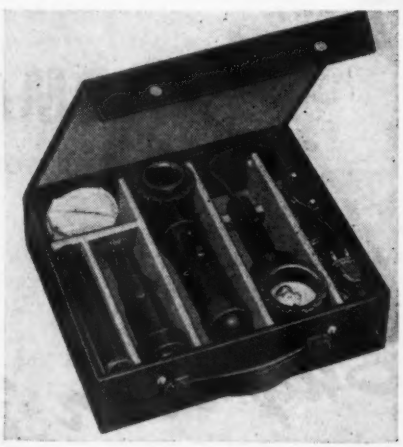


Easily attached electric speed - indicator (Reliance)

Portable Magnifier Set

A new tool for the textile industry is offered in the form of a new assembly of wide-field magnifiers with built-in illuminating units, operated by battery and by electric control, and manufactured by R. P. Cargille, 118 Liberty St., New York 6. This new tool contains 7-power, 20-power and 40-power magnifiers. The 40-power is equipped with a 0.001-in. scale, and can be used independently of outside illumination.

The set provides laboratories and inspection departments with a highly efficient means of observing details invisible to the unaided eye. It is useful for the examination of fibers and inspection of finished fabrics for defects.



Master Magnifier set No. 44 developed for use in textile industry (Cargille)

OSCAR HEINEMAN CORPORATION

THROWSTERS of Yarns for the Hosiery Trade

Quality Products for Fifty Years

We take pride in the fact that we were pioneers in the practical application of *Avconit in the sizing and processing of high twist Rayon yarns.

Our processing results in maximum production with a minimum of seconds and waste. We are prepared to process your yarns to best meet your particular needs.

For best results have your yarns processed the *Avconit way by

HEINEMAN

2701 ARMITAGE AVENUE—CHICAGO 47, ILLINOIS

Aberfoyle Mfg. Co.	N. P. Murphy	C. D. Gott Co.
123 S. Broad St.	813 Guilford Bldg.	3303 Brainerd Rd.
Philadelphia, Pa.	Greensboro, N. C.	Chattanooga, Tenn.

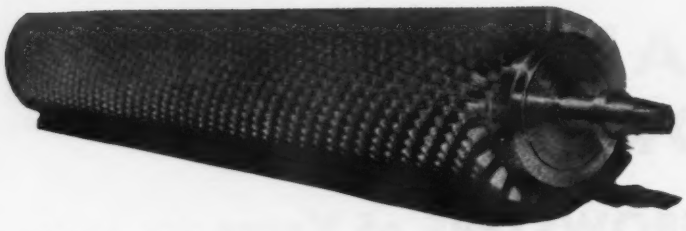
*Trade Mark
American Viscose Corp.

For Lasting Satisfaction Use

JENKINS

METAL CORE, NYLON BRISTLE

FURNISHER BRUSH



These brushes are as easy to clean after using as a stainless steel dye tub.

The cores are made from tubular steel or aluminum. They are everlasting because they will not warp or split. The bristle is wound in place on the cores with flat metal. The cores can be rewound with new bristle time after time.

The Nylon Bristle wears far longer than any other kind. The brush can be washed free of dyestuffs and so the brush will not bleed when colors are changed.

These brushes reduce the quantity of dyestuff used by 10% to 25%

WE ALSO MANUFACTURE RAISING BRUSHES, FLOCK BRUSHES, AND LAYING BRUSHES FOR COTTON, WOOLEN, AND WORSTED MILLS.

M. W. JENKINS' SONS, INC.
CEDAR GROVE, ESSEX COUNTY, NEW JERSEY

Since 1877—Manufacturers of all types of Industrial Brushes.

QUALITY RICHMOND PRODUCTS

Less Handling with

AFTER CHLOR

eliminates
3 to 5 handlings

Bleach with HYPOCHLORITE Rinse and Use

AFTER-CHLOR *That's All!*

●

Write for FREE Sample—enough for a Trial Run

Our Technical Department is at your Service

RICHMOND OIL, SOAP & CHEMICAL CO., Inc.
153-155 RICHMOND STREET
PHILADELPHIA 25, PA.

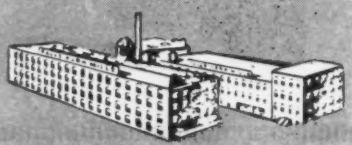
Fallspun

QUALITY

YARNS

FINE WOOLEN & SPECIALTIES

ESTABLISHED 1904



Falls Yarn Mills
WOONSOCKET RHODE ISLAND

NEWS Of The Month

THE TEXTILE INDUSTRY, in common with all America and the United Nations, mourns the death of Franklin Roosevelt, who died at the pinnacle of his fame as a great war leader and, we hope the future will prove, as a founder of a long-enduring, world-wide peace. The industry's war effort will continue unabated under our new executive, Harry Truman, with whom we shall work faithfully for national and international security.—Editor.

Army Pushes Tops. The Army's special project team, composed of 10 picked officers, which did an excellent speeding-up job in cotton-duck production, has moved to another field. It is now in New England to stimulate production of wool tops, another item on the urgency list. Its members will work with mill operators and with employees, individually and in groups, in an effort to curtail absenteeism and "quitting" of present employees as well as to recruit new ones. Army alone needs 500,000 lb. more tops per week.

Print Cloth Price Cut. OPA dropped a textile bombshell when, on Apr. 9, it announced a 1¢ cut in print cloth prices affecting existing contracts.

Duck Output Up. In July and August, 1944, production of duck and substitute fabrics totaled less than 30,000,000 yd. monthly. By early fall the

THE THEME of Cotton Week's observance this year, May 21-26, is appropriately a timely fighting message reflecting the current short supplies of cotton textiles for civilian use as a result of the continued drain on the production of the mills for direct and indirect war purposes, and it is symbolized in the poster shown above.

Dreaming

. . . of days to come, . . . days of Peace throughout the world, and of good-will toward mankind . . . Yes, dreaming of full and happy years ahead, . . . of the better things and better conditions which will be hers and ours, when Victory is won.

Among these peace-time rewards will be more and finer hosiery . . . made more beautiful and more serviceable by being finished with:

DuraBeau FINISHES

Reg. U.S.A. and Canada

SCHOLLER BROS., INC.

Mfrs. of Textile Soaps, Softeners, Oils, Finishes
Collins & Westmoreland Streets, Phila. 34, Pa.
St. Catharines, Ont., Can.

FOR FULL EFFICIENCY

To develop the full efficiency of cards, equip them with BOOTH Card Clothing. There is a complete line; Cylinder Clothing, Doffers, Workers, Strippers, Angle Strippers, Tumblers, Fancies, Rings, Lickerins, Feed Rolls, etc.

BOOTH QUALITY Card Clothing

Has a firm foundation of fabric or leather, yet is flexible, which reduces the possibility of shelling out. All clothing is available with rehardened points if desired.

Benjamin Booth Co.

Allegheny Ave. & Janney St.

PHILADELPHIA 34, PA.

figure had risen to 40,000,000 yd. Production is now close to 80,000,000 yd. This present figure takes care of minimum military requirements. However, the unscreened requirements were set at about 120,000,000 yd. a month.

No "Windfall" Profits. Dr. C. T. Murchison, president, Cotton-Textile Institute, took exception to OPA Administrator Bowles' statement that the cotton-textile industry has made huge windfall profits through the Bankhead-Brown Amendment to the Price Stabilization Act.

Finishing Symposium. A symposium on "Recent Developments in Finishing and their Applications to Fabrics" was conducted at the meeting of the New York Section of AATCC on Mar. 17. Alden D. Nute, Calco Chemical Di-

AMERICAN FASHIONS and fabrics are being displayed by The Metropolitan Museum of Art, New York, through May, 1945. Gowns shown are made by leading American dress designers from fabrics specially designed from objects in the Museum collections. The frock above (designed by Delmar Mayehoff) is made of Bemberg fabric from Catoir Silk Co. with pattern designed by Andre Flory, in collaboration with Mayehoff, from an engraving of birds in a renaissance book of embroidery designs.

It's as simple as that . . . just jot down in your postwar planning file to specify U. S. products. And, when peace comes, we'll be able to supply you with *greatly* improved machines, made better by research and development. Uncle Sam now uses our production efforts; but after the war, plan on using:

- **U. S. ACME TWISTERS for spool or headless package**
- **U. S. JUMBO FACE DRIVE TWISTERS for large headless package work**
- **U. S. ACME DOUBLER TWISTERS, large package**
- **U. S. REDRAWS and SPOOLERS**

U. S. TEXTILE MACHINE CO.

SCRANTON, PENNSYLVANIA, U. S. A.

LeaTex

The name that means leadership in

CHEMICAL SPECIALTIES

for the

TEXTILE INDUSTRY

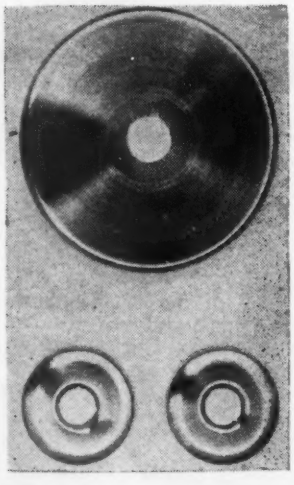
"Always Reliable"

LEATEX CHEMICAL COMPANY
2722 N. HANCOCK ST., PHILADELPHIA, PA.

REEL CAPS

Hard Chromium-Plated Steel Reel Caps, made in sizes to fit your bobbin heads. *Write for quotation.*

WAYNE MANUFACTURING CO.
Textile Mill Supplies
HONESDALE, PENNSYLVANIA



TENSION-DISCS

Made of hardened steel, hard Chromium plated to resist wear and corrosion. Fit Universal Tension Bracket. *Write for quotation.*

CETASIZE

The acetate and viscose warp size you're looking for...

OUR LINE OF TEXTILE STARCHES, GUMS, DEXTRINES AND SPECIALTY MATERIALS ALSO INCLUDES:

W GUM D and VICTORY K2W GUM
For sizing staple synthetic yarns and blends.

RTF GUM
For laundry resistant finishes.

KAC No. 4 with B2 or SUSSEX GUM
For use in vat dyeing . . higher color yield.

96R and VELVEEN XX
For sizing cotton.

RTC GUM
For sanforizing and weighting.

CETOSOL SF
For starchless finishes.

SHO-PAL THICKENER and BINDER
For pigment printing and pigment dyeing in water dispersions . excellent wash fastness.

WHY?

BECAUSE THIS HIGH QUALITY PROTEIN POWDER OFFERS YOU

SIX ADVANTAGES

1. Replaces other sizing materials which may be difficult to obtain.
2. Easily prepared.
3. No softeners required.
4. Runs clear on the machine—no foam.
5. Size easily removed.
6. High loom efficiency.

An increasing number of plants are enjoying these values in their regular production. Whether you're weaving rayon now or planning to weave it after the war, prove for yourself that CETASIZE is the answer to your acetate or viscose warp sizing problem.

Order a sample today—and ask for a Demonstration.

79 YEARS OF STARCH SERVICE

STEIN HALL

285 MADISON AVENUE • NEW YORK 17, N. Y.
2841 SOUTH ASHLAND AVENUE • CHICAGO 8, ILL.
230 VAN HORNE STREET • TORONTO, CANADA

EST. 1866

LABORATORIES AT: NEW YORK
CHICAGO • CHARLOTTE • PROVIDENCE
LONG ISLAND CITY, N. Y.

A TEXTILE STARCH FOR EVERY TEXTILE PURPOSE

MILLIONS
of POUNDS
of RAYON YARN
have been dyed by
Atlantic
•
Viscose and Acetate
Filament and Spun

Dyed in packages wound from cakes, cones or tubes; or in skeins, as requirements or economy dictates.

Up to 1,000 lbs. per batch per color.

Atlantic Rayon
CORPORATION

Dyers and Converters of Synthetic Yarns for All Industries

Plant at Providence 1, Rhode Island

NEW YORK OFFICE
Empire State Bldg., 5th Ave.
NEW YORK 1

3701 North Broad St.
PHILADELPHIA 40

vision, American Cyanamid Co., spoke on "Some Recent Aspects in the Finishing of Textile Fabrics with Melamine Resins." Capt. Joseph E. Goodavage, Philadelphia QM Depot, discussed "Some Aspects of Finishing Marquisette with Cellulose Derivatives." Robert R. Ackley, Fellow for the Onyx Oil & Chemical Co. at the Mellon Institute of Industrial Research, spoke on "The Softening and Lubrication of Textiles."

80th Anniversary. Deering, Milliken & Co., New York, held open house for over 3,000 representatives of the textile, apparel, and related industries last month on the occasion of its 80th anniversary.

Conditioning Laboratory. Facilities for carrying on the research activities of the AATCC will be improved by installation of a conditioning laboratory at Lowell Textile Institute, to permit physical tests and other work under controlled atmospheric conditions.

Silk Study in California. A committee appointed to inquire into the possibilities of sericulture and silk-fabric production in California has reported to the state legislature favorably on both counts. The report touches only lightly on the problem of synthetics competition.

Memphis Wants Cotton Mills. That Memphis, Tenn., is an efficient location for cotton mills because it is handy to raw material and to westward-moving piece-goods markets is the conclusion reached by the Memphis Chamber of Commerce. A free booklet draws comparisons with Alabama, Georgia, South Carolina, New England, and other areas.

Enemy Textile Patents. Hundreds of textile inventions are covered by the 45,000 enemy patents soon to be made available to American citizens by the Alien Property Custodian. Abstracts of these patents can be obtained from the Chicago office (Field Building) of APC in the following groups: 63 patents on textile (Class No. 28, 10c.); 235 on fiber preparation (No. 19, 10c.); 183 on spinning, twisting, and twining (No. 57, 10c.); 275 weaving (No. 139, 25c.); 39 on cloth finishing (No. 26, 10c.); 223 on bleaching and dyeing (No. 8, 10c.); 91 on textile fluid-treating apparatus (No. 68, 10c.); and 346 on knitting (No. 66, 25c.). Under the general classification of Organic Chemistry, the following sections, each available for $1, are of interest to textile men: plastics, synthetic resins, plasticizers, solvents (No. 23); natural and synthetic fibers (No. 25); and dyes, dyeing processes, and textile chemicals (No. 26).

Loomfixers' MANUAL

WOOL SECTION
Chapter XVIII (Cont.)

AUTOMATIC FILLING MOTION

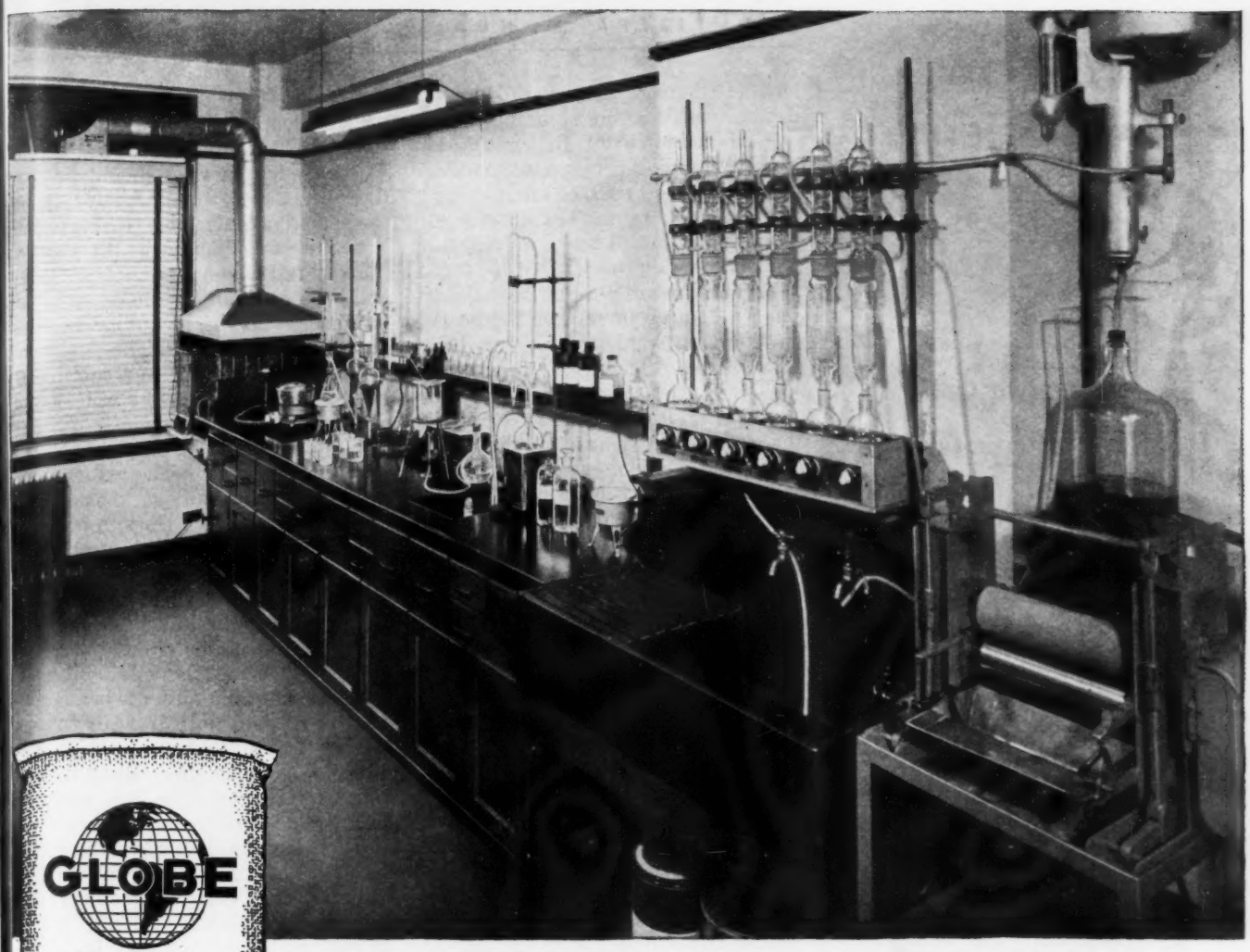
By EUGENE P. SCHREMP

ADJUSTMENT OF MAGAZINE on shuttle-changing looms is of importance if correct transfer of shuttles is to be obtained. Five points to be considered when making adjustments are as follows:

1. The distance A, Fig. W-43, from the edge of the lay sword to the inside face of the magazine frame should equal 10 1/16 in. on the W-2 and W-3 C&K loom. This distance is the same on the blanket and also on the worsted loom, if equipped with an iron lay end. On the old style looms, with a wooden lay end, the distance should be set at 9 1/16 in.

2. The difference in height B, Fig. W-44, between the race plate and the breast beam, with the lay at front center, is 1/16 in. on the woolen and worsted looms. This distance is varied by raising or lowering the lay sword. Slots in the feet of the lay sword and a locking setscrew are provided for making such adjustments. However, the lay must be level at all times. On older looms the bushing and rocker shaft sometimes wear and allow the lay to drop. In such cases the bushings and shaft should be replaced, care being taken to readjust all related motions.

3. The distance C, Fig. W-44, from the reed line to the inside edge of the breast beam should be 5 1/4 in. This measurement is controlled by the length of the adjustable crank arms. Both crank arms should be the same



Looking Ahead to Better Textiles

OUR experienced technicians, using the complete facilities of our textile laboratory, at Greenville, S. C., have successfully solved many problems in the use of starch. We cordially invite you to consult them if you have any starch problems. Their services are at your command.

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PAINTS The Way To IMPROVED PLANT PRODUCTION

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length, otherwise the lay will not be parallel with the breast beam.

4. If measurement *B*, Fig. W-44, is correct and the magazine stand is level, the inside edge of the magazine frame should clear the box back by not more than ¼-in. A magazine will not transfer properly when raised too high.

5. The forward position of the magazine is located in respect to the lay on front center. Loom builders have gage blocks. These vary with each size of shuttle. Such a gage block is shown in position in Fig. W-45. With the lay at front center, the front bobbin head-guide should rest against the gage when it is held firmly against the box back and the race plate. A new shuttle with a full bobbin should be used when a gage is not available. Make certain that the transfer arm is square with the magazine.

Loosen the two bolts that hold the magazine to the stand and also to the back brace. Square the magazine with the lay end. Then position the magazine so that the transfer arm will clear the back wall of the shuttle by approximately ⅛-in.

Transfer arms are sometimes thrown out of alignment by what is commonly known as "bad doffs." A bad doff occurs when the bobbin does not transfer into the shuttle properly. The transfer arm should always be checked after a bad doff. To accomplish this, the lay is brought to front center. Check the distance between the lay and the breast beam. This distance should be 5¼ in. on most woolen and worsted looms. The lay should also be ⅛-in. lower than the breast beam. The outside give ways should be central with the outside magazine frame so that a bobbin in the give ways will line up with a bobbin in the shuttle. Place a full bobbin in the give ways and bring the transfer arm down to determine if the heel contour fits the rings on the bobbin. The heel contour should cover the top-central part of the rings and clear the wall of the shuttle. If the arm is not in this position, it should be removed, placed in a vise and the heel contour bent backward or forward so that it will center on the bobbin rings. A bending tool made from flat ⅜-in. steel, illustrated in Fig. W-46, will prove very useful for this job. This tool may be easily made in the mill machine shop from the dimensions given.

After the heel is properly positioned the paddle of the transfer is bent backward or forward until it clears the inside of the shuttle back by ⅛-in. A piece of one-inch pipe, about 18 in. long, is very useful for this purpose. The paddle should also be bent upward or downward so when the transfer arm is lowered on to a full bobbin by hand, the heel will contact the rings and the paddle will rest lightly on the yarn of the bobbin. It should also be square with the magazine. If properly set the new bobbin will clear the front and back wall of the shuttle when transferred by hand power.

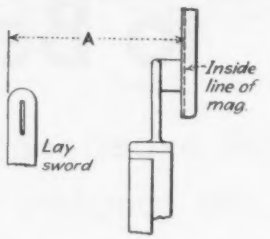

Fig. W-43. Locating the position of the magazine in relation to the lay.

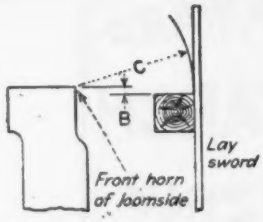

Fig. W-44. Relationship between the breast beam and the race plate.

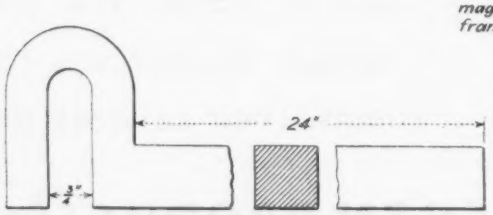

Fig. W-46. A tool easily made in the mill for bending the heel of transfer lever.

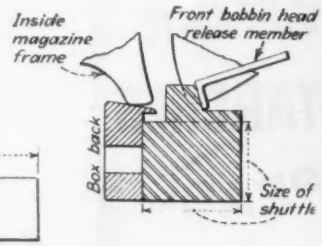

Fig. W-45. Gage block used for adjusting transfer mechanism.

O N Y X

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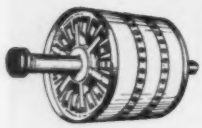

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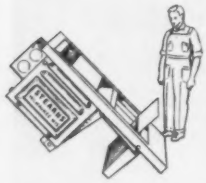

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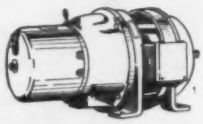

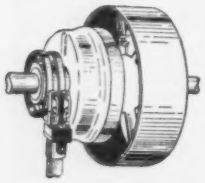

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BOOSTING EMPLOYEES' Morale

U. S. Government Plans Course in Textiles

Plans have been announced for a war training course in textiles at Hickory, N. C., to be sponsored by the United States Office of Education. It will be taught by Howard K. Spry, superintendent of Ivey Weavers. Expenses, other than text books, will be paid by the Federal government.

Fashion Show Given For Employees

Employees of Munsingwear, Inc., Minneapolis, Minn., recently attended a fashion show of the lingerie and foundation garments they manufacture. Spring and summer fashions were modeled under the direction of Jane Gibney, design director, and the company's war production was demonstrated by the president, E. L. Olrich. The purpose of the show was to give the employees an idea of the finished appearance of the products for which they have been knitting, cutting, and sewing individual pieces.

More "E" Awards

Employees of the Energetic Worsted Corp., Bridgeport, Pa., and the Winnsboro Mills plant of United States Rubber Co., Winnsboro, S. C., received the Army-Navy "E" award recently for their contribution to the war effort through the production of war materials.

Mills which recently received additional stars for their Army-Navy pennants include the American Silk Mills, Orange, Va., fourth award; and Burkey Underwear Co., Hamburg, Pa., second award.

Employees Receive Safety Award

Employees of Frank Ix & Sons, Inc., Charlottesville, Va., have completed 729,000 man-hours of work without a single loss-of-time accident, and have received a certificate of award from the Liberty-Mutual Insurance Co.

French Relief Group Asks For Textiles

• The American Relief for France, Inc., 1710 Connecticut Avenue, Washington, D. C., is anxious to receive textiles of any type to be remade into garments for French civilians.

HEROES OF BASTOGNE, selected by General Eisenhower, to return home to urge war-workers to "stay on the job to finish the job" are shown above making their first official U. S. appearance on stage at the Chattanooga, Tenn., Memorial Auditorium to address 5,000 textile workers who were saluted Mar. 2 by Coca-Cola's Victory Parade Spotlight band on a coast-to-coast broadcast. All but two of the beribboned veterans are southern lads. Shown here, left to right, they include Capt. Thomas B. Sawyer, of Atlanta, industrial services officer in charge of the tour; Sgt. Ed Ford at the microphone; Capt. Robert H. Lemmon; S Sgt. Jackson B. Vail; Pfc. James L. Ball; Pfc. George Long; Cpl. Ralph Cox. They are members of the 101st Airborne Division which held out in Bastogne to break the back of the German offensive in the Belgium bulge.

One of a Series of Adventures of the Armour Soap Sleuth

The great dyehouse mystery

"OUR DYEHOUSE is in the doghouse!" cried the foreman. "The cottons and rayons keep coming out streaky and cloudy...and since we've had this trouble I've been leading a dog's life! We've got to get rid of this uneven dyeing!"

The Armour Soap Sleuth grinned through the smoke from his meerschaum—he had solved cases like this before. "Ha," he said, "they've got the wrong party in the doghouse. *This cloth wasn't clean before dyeing.* Obviously they're using the wrong kind of soap in the after-scouring!"

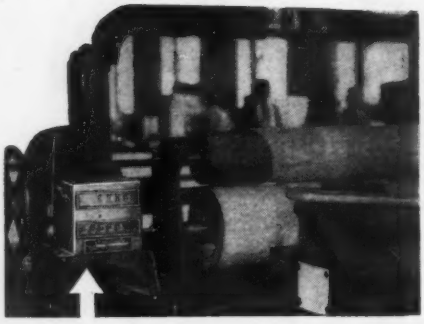
"Cotton and rayon cloth scouring after the bleaching and rinse should be done at about 180°–190° F. This calls for a high-titer soap like Armour's Flint Chips. Its titer is guaranteed from 41°–42°C. Flint penetrates quickly, rinses fast...knocks out throwing oils and weaving compounds—*leaves goods clean and lustrous for the dyehouse!* If you have any other difficulties, give me a ring. Armour is glad to help."

INDUSTRIAL SOAP DIVISION

Armour and Company

1355 W. 31st Street, Chicago 9, Illinois

Controlled Production



on Textile Machines

You always know what your machines are turning out when

PRODUCTIMETERS

are attached to them. No guesswork about it . . . the exact figures are registered right there on the counter . . . figures you can use for estimating production control . . . time study . . . costs . . . maintenance and servicing.

Illustrations: (above) Double Deck Rotary Model 4-5-E-7-Q installed on Doubling Machine . . . counter geared to record in yards from 18" circum. roll. (below) Larger view of similar model 5-6-E-7.

Complete line for application on various textile machines includes Rotary Counters, Lineal Measuring Units and Loom Pick Counters.

Send for Textile Counter Catalogs

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Revolution Counters No. 8

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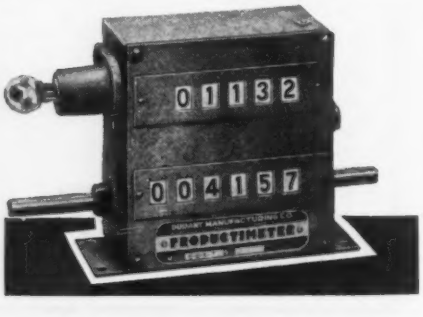

Abrasion Resistance of RAYON LININGS

HIGHLIGHTS: Warp yarn always wears out first according to Sears-Roebuck tests. The looser the weave, the lower the abrasion resistance. High-tenacity yarns give no more wear cycles.

SIMPLIFICATION, STANDARDIZATION, AND IMPROVEMENTS were the three basic factors motivating an investigation of rayon linings, according to J. H. Tait, of Sears, Roebuck & Co. In his talk before the March meeting of the American Association of Textile Technologists, Mr. Tait stated that this research was conducted by the company's laboratory in an effort to reduce to a minimum the number of basic lining fabrics and to improve the functional characteristics of these basic fabrics.

PROBLEMS. A determination of the factors of wear in a lining material was the first problem, of which the major factor was abrasion. Secondly was the resistance to perspiration and color migration.

The Taber machine was selected for abrasion tests as it was best suited to requirements for the type of work desired done in the time that was allowed. Preliminary tests made with the Taber showed that it was necessary to develop a technic as well as to set up standards for testing. A photographic standard from which the operator could work was needful to establish an endpoint of abrasion. Tests conducted in the above manner were made on over 1,100 lining fabrics. Observations are as follows.

1. Examination of all abraded samples showed that the warp yarn always wore out first. This was confirmed upon examination of worn garments.

2. An even, related series of steps or increases in abrasion-resistance is found as the count increases. Each group of higher sley fabrics is much broader than the one lower. Therefore one may assume that a point can be reached where economically the increase of abrasion resistance of a fabric does not justify the increased cost of such a fabric.

3. All tests show a consistent drop in abrasion resistance when the warp yarn size is reduced below 150 den. Little gain is found above that. This size restriction applies primarily to the warp yarn.

4. Regarding the relationship between the number of filaments per given yarn size and the effect on abrasion resistance, the tests were not able to measure any appreciable difference.

5. The type of weave greatly affects the resistance to abrasion. The looser the weave the lower the abrasion resistance and this is counter to the factor of fabric strength. As the float of the warp yarn lengthens the tensile strength increases but the resistance to abrasion is lowered.

6. The filling yarn plays a very minor role in its effect on abrasion resistance, this is particularly true in twill and satin weaves and not as noticeable on plain weaves. Changes of yarn size and type had no appreciable effect on abrasion. The number of filling threads had very little effect on the abrasion resistance. Technicians in charge of the tests believe that variations can best be carried out by changes in the filling yarn.

7. Experimental fabrics were made by adding twist to the warp yarns; findings were that as this twist was increased an appreciable drop in amount of resistance to abrasion was experienced.

8. A series of identical fabrics were constructed; some were piece dyed, others were made of spun-dyed yarns that required little or no finishing. Findings were that a spun-dyed finished fabric is of higher tensile strength than a similar piece-dyed fabric. The reverse seemed to be true as far as abrasion resistance is concerned.

9. In almost all instances fabrics of high-tenacity yarns gave no more wear cycles than those woven of yarn of normal strength.

10. Results indicate that the greater the elongation in the finished fabric the greater amount of inherent wear one might expect to find in that fabric.

11. From the standpoint of wearing qualities in lining materials, all-viscose fabrics appear to be superior to all other combinations.

12. If a fabric is woven at 42 in. and allowed a natural shrinkage in finishing to 40 in. rather than being held out to 41½ in., and that if first grade yarns are used, a much superior and longer wearing fabric results than the one that has been unduly stretched in dyeing and finishing. If brutal dyeing and finishing methods are employed, a large part of the life of the fabric is lost.

These Hooker Chemicals are Helping Textile and Dye Chemists

Listed below are some of the Hooker chemicals that are making life a little easier for textile and dye chemists. We have indicated their principal uses in your fields, but many of them have other uses in the textile field as well. All are made with the uniform high quality that you can depend upon to help you maintain your own quality standards.

Product Chemical Formula Molecular weight	*Description*	*Uses*
Aluminum Chloride, Anhydrous $AlCl_3$; 133.3	Gray crystalline solid	Catalyst; Dye making
Antimony Trichloride, Anhydrous $SbCl_3$; 228.1	Yellowish solid	Catalyst; Dye making; Mordant in textile printing; Moisture and fire-proofing textile
Benzoate of Soda C_6H_5COONa; 144.0	White crystalline solid	Dye intermediate
Benzoic Acid C_6H_5COOH; 122.1	White crystalline material	Dye intermediate
Dichlornaphthalene $C_{10}H_6Cl_2$; 197	White crystalline solid	Chemical intermediate
Cyclohexanol (Hexahydro Phenol) $C_6H_{11}OH$; 100.1	Clear, colorless viscous liquid	Solvent
Monochlortoluene $C_6H_4Cl\text{-}CH_3$; 126.5	Clear, colorless liquid	Solvent; Dye intermediate
Orthodichlorbenzene $C_6H_4Cl_2$; 147	Clear, colorless liquid	Solvent, Dye intermediate
Phosgene (Carbonyl Chloride) $COCl_2$; 98.9	Colorless gas at ordinary temp. Colorless to light yellow liquid under pressure	Dye intermediate, Chlorinating agent
Sodium Tetrasulfide Na_2S_4; 174.23	Aqueous solution containing 40% by weight of compound. Dark red liquid.	Manufacture of dyes

In addition to the chemicals listed above, Hooker makes many more that are being increasingly used in the textile and dyeing fields. Our technical staff has been helpful in solving problems in these fields with use of Hooker chemicals and is ready to work with you in the application of Hooker chemicals to meet your requirements. A copy of the Hooker General Products List, available on request, will give you an idea of the diversity of Hooker chemicals and their uses.

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HOOKER CHEMICALS

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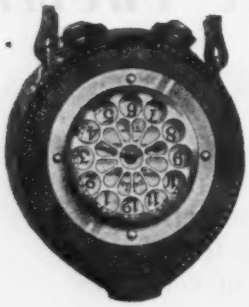
CHICAGO WATCHCLOCKS



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TEXTILE INDUSTRY

for more than 60 years

—because they have given dependable service under all conditions — year after year at an astonishingly small cost—and have kept watchmen

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Sturdy 8 day movement; frictionless key action; rustproof, non - corrosive construction. Approved by Underwriters' Laboratories, Inc. and by the Associated Factory Mutuals.

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Bemis L-M Gets Results

HIGHLIGHTS: Plant at Talladega coordinates its production drive through a rotating joint committee.

Labor-Management Committee at Bemis Bros. Bemiston plant in session. Left to right: B. S. Askew, overseer of spinning; M. B. Herd, overhauler, twisting; S. P. Agnew, research director; J. E. Brown, card grinder; Louise Patterson, personnel attendant; H. B. Bergfeld, plant superintendent; W. B. Garner, overseer of carding, assistant plant superintendent; B. W. Barton, weaver; A. W. Herring, overseer of weaving; A. G. Parks, oiler, spinning, T. E. Merrell, carpenter; C. L. Duke, overseer of finishing.

By H. B. BERGFELD

Superintendent, Bemis Bros. Bag Co.
Talladega, Ala.

THE WAR PRODUCTION DRIVE at Bemis Bros. Bag Co., Talladega, Ala,. was officially initiated in June, 1942, with the organization of a Labor-Management Committee comprised of five members from labor and four members from management. The membership of this committee is of a rotating nature, with one member from each group terminating membership monthly and being replaced by a new member, thus insuring three old and one new member in each group at all times. It has been in successful operation for nearly three years.

The joint committee meets semi-monthly on the second and fourth Saturdays, not only with its regular members but also with representatives from various standing committees. The latter formally report on the activities of their respective committees.

These standing committees, with a permanent membership active at all times, include Information or Publicity, Safety, Suggestions, Transportation, Poster and Bulletin Boards, Production, War Bonds and Stamps, and Welfare.

Suggestions or recommendations originating at the meetings of the joint committee are referred to the suitable sub-committees in the various departments throughout the plant on the various operating shifts, and are applied or put into practice by the employee members of those sub-committees.

Bemiston's L-M Committee is always on the alert for ideas or mediums which may serve to stimulate or sustain interest and enthusiasm in the production drive. It has been successful in the utilization of incentive sound-films secured through the facilities of the Army and Navy, has had fair success in educational programs for nutrition and home menus, has provided adequate facilities for the supply of refreshments to employees at their jobs, has furnished (without cost) coffee to employees assigned to the third shift, has used numerous means to combat absenteeism, etc.

The committee feels that it has met with gratifying success in applying the "In-Plant Training Programs," sponsored by the War Manpower Commission. The original "Job Instructor" course so definitely and promptly contributed to the production drive that the more advanced courses were arranged for and courses in "Job Relations" and "Job Methods" were successfully conducted with obvious benefit.

AWARDED...

TO THE MEN AND WOMEN OF NUODEX for Outstanding Production of Copper Fungicides for Fabrics, as a result of

. . . ORIGINAL RESEARCH
. . . GOOD PRODUCT DEVELOPMENT
. . . FINE TECHNICAL SERVICE

In a letter dated January 31, 1945 Guy I. Rowe, Brigadier General, commanding the Jeffersonville, Ind., Quartermaster Depot wrote:

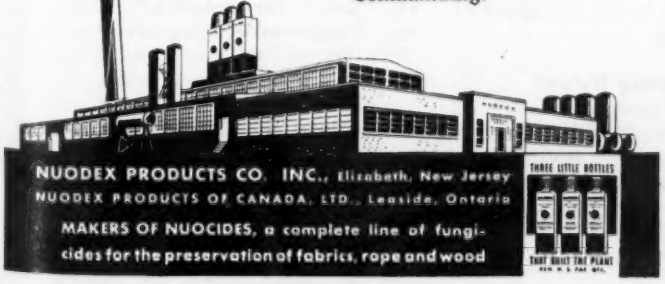
"We have just been informed that your Elizabeth Plant has been given the distinction of the Army-Navy 'E' Award for production.

"Inasmuch as this Depot indirectly has been one of your large consumers, and not only has your production but the quality and value of your product, as well as the cooperation you have always rendered, been so excellent, we feel in great measure equally honored by the selection of your company.

"We wish to extend to you and to each and every one of your employees, at this time, congratulations from this Depot in joining us in the ranks of the select group of recipients of the 'E' Award."

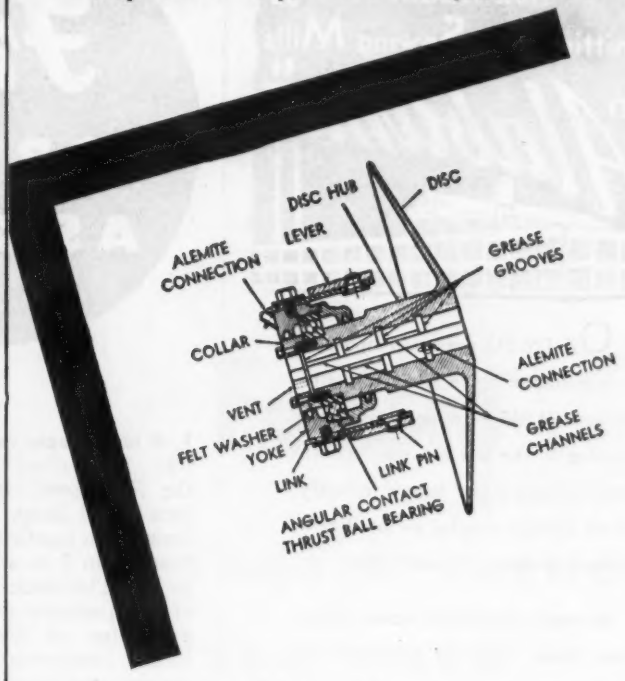
Sincerely yours,

GUY I. ROWE,
Brigadier General, U.S.A.,
Commanding.



NUODEX PRODUCTS CO. INC., Elizabeth, New Jersey
NUODEX PRODUCTS OF CANADA, LTD., Leaside, Ontario
MAKERS OF NUOCIDES, a complete line of fungicides for the preservation of fabrics, rope and wood

★ A smooth operating feature you would expect from speed-control pioneers



Only Lewellen gives you this thrust bearing perfection

● The performance of Lewellen Variable-Speed Transmissions is the result of a number of outstanding features. One of great importance is the angular contact thrust bearings, mounted at the outer end of the disc hub. Each has a single, diagonal point of contact between the balls and the races. In this way the bearings provide for both the thrust load and the radial load set up by the high speeds of the shaft, and GIVE A MUCH GREATER LOAD CAPACITY THAN ANY OTHER TYPE OF BEARING. The lubricant seals for this bearing are within its radius, at the smallest diameter of the bearing housing. This, by means of the centrifugal force developed, prevents the lubricant from working out at the seals. The entire thrust bearing is enclosed in an oil-tight housing, which is attached to the main operating levers by suitable link connections, making the bearing self-aligning in every direction.

Lewellen's more than 45 years' experience in specialized speed-control engineering is responsible for this highly important, patented feature. There is a Lewellen Transmission to meet your need. Wire, phone or write for complete information!

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COLUMBUS, INDIANA

OF 126,215 persons employed in manufacturing in Alabama, only 20% — 24,646 — were women, according to the last census. In both rural counties and heavy industry cities, a large surplus of intelligent women workers is available.

Recently completed studies show that these types of products for which principal raw materials are available from nearby sources, are best suited to labor conditions in Alabama:

Seamless Hosiery, Full-fashioned Hosiery, Ribbons, Braids, All Kinds of Underwear (men's, women's and children's), Sports Wear, Sweaters, Dresses, Aprons (Shop and Tea), Caps, Children's Clothes, Work and Dress Shirts, Men's Wash-suits, Overalls, Work-pants, and Work Socks.

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MANUFACTURERS' BULLETINS

READERS interested in literature reviewed on this page may secure copies with time-saving coupon on page 224. Mark what you want on it and send it to Textile World, 330 West 42nd St., New York 18, N. Y. Be sure to give your name and company connections.

1. A long-staple roving frame, model FS-1, is described in the January issue of the *Saco-Lowell Bulletin*, published by Saco-Lowell Shops. This roving frame is designed to handle fibers ranging in length from 1½ to 3 in. and to provide drafts up to 24. The article describes the operation of this particular drafting system and has a number of illustrations showing its various components. A table is included showing the various types of stock and also lengths which can be handled.

Other articles of interest to the textile mill man in the same issue are on a new buttress-fluted, fine, crosscut, evener roll for pickers; an article dealing with processing staple fibers; and another article covering various electronic applications used in and about textile mills.

2. Comments on the term rayon, as being considered by Sub-Committee B-2 of Committee D-13, ASTM, appear in the February issue of *Rayon Warp Sizing Specalist*, published by Charles B. Johnson Machine Works. It is pointed out that in Canada the man-made fibers are generally known as silk.

3. Lubrication of anti-friction bearings is discussed in the February issue of *Lubrication*, published by The Texas Co. This article discusses the use of spraying lubrication on high-speed, oil-sealed bearings; rust and oxidation resistant lubrication; and means for re-lubricating sealed bearings.

4. Fire hazards in textile plants are discussed in the March issue of the *Factory Mutual Record*, published by the Associated Fire Insurance Companies. This article illustrates how drop-cord electric lamps offer a serious fire hazard, particularly when placed at the head of jacquard looms. It describes how at one plant a fire caused by a lamp socket shut down 13 looms for nine weeks.

5. "Dyeing and Printing Nylon," is the title of No. 2 of a series of booklets on Aridye pigment colors for "the fabrics of tomorrow." This booklet, issued by Aridye Corp., describes the methods which have been developed for applying resin-bonded pigment dyes to nylon fabrics for military purposes and for postwar civilian uses.

6. Terson, a vinyl resin coated and/or impregnated fabric, is discussed in a booklet issued by Athol Mfg. Co. Wartime uses of Terson such as for bedding bags, ski tents, hospital sheetings, airplane engine covers, etc. are mentioned. Information such as its uses, properties, and advantages are discussed.

7. A chlorinated paraffin for industrial use, known as Diamond Chlorowax, is discussed in a booklet being offered by Diamond Alkali Co. Chemical and physical properties, solubility, compatibility with plastics, and its present use in flame-resistant coatings as well as suggested uses for coating textiles are covered.

8. Ceramics for industrial uses are described in bulletin No. 444 recently published by the American Lava Corp. AlSiMag ceramic as used in the textile industry for spinning and winding machinery is illustrated as well as various AlSiMag parts used by other industries.

9. Treating of cotton duck with resins and other ingredients is discussed in the February issue of *U.S.I. Chemical News*, published by U. S. Industrial Chemicals Corp. Another article of interest describes a wool-like synthetic made from peanuts.

10. "A High Melting Point Synthetic Wax," is the title of a 16-page bulletin issued by The Glyco Products Co., which describes Acrawax C. This wax, which has a melting point of 280° F. and water repellent characteristics, may be used by the textile industry in the finishing of fabrics.

11. "Color for Industry," is the title of a 16-page booklet being offered by U. S. Gutta Percha Paint Co. This booklet outlines a painting program which offers a sensible approach to the use of color in industry and also incorporates the safety color code.

12. Handling Materials, Volume 3, No. 1, published by Towmotor Corp., illustrates and describes how handling materials can readily simplify the packing and

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storing problem. A number of photographs are included showing mechanical handling equipment stacking bales.

13. "You and the Returning Veteran," is the title of a guide for foremen recently issued by Allis-Chalmers Mfg. Co. This booklet offers a reinstatement plan program which should be helpful to mills and one which contains much information in supervising and directing the work of returned veterans. The handling of physical and mental ills of returning veterans is also discussed in great detail.

14. Statistics covering air express poundage, air-mail and passenger service, and the air lines are covered in a booklet entitled "Little Known Facts About the Scheduled Air Transport Industry." Information on handling of freight and other materials should prove of interest to mill men.

15. "Designing an Air Filter Installation," is the title of a 16-page bulletin being offered by American Air Filter Co., Inc. Technical data and general information covering the selection, application, and installation of standard types of air filters are discussed.

16. A knitted mesh of wire with asbestos used for exhaust-line gaskets for sealing gases at 2,000° F., is described in an article appearing in Volume 19, No. 3 of *Inco*, published by the International Nickel Co.

17. A chain hoist bulletin has just been issued by Chester Mfg. Co. This 12-page bulletin describes and illustrates the entire line of chain hoists and trolleys made by that company, and also covers the care and use of such equipment.

18. Wire grommet V-belts which contain a wire cord, are described in a 4-page folder just issued by the Diamond Rubber Division of The B. F. Goodrich Co. Illustrations show the construction of this particular type of belt, and an outline is given of its particular usefulness in handling tough transmission problems.

19. Principles of operation and ranges of size in both industrial and sanitary pumps are covered in a 104-page catalog recently issued by Bump Pump Co. Operating and construction features, dimension and installation diagrams, horsepower charts, equivalent and friction loss tables are contained.

20. Uses of carbon graphite and Karbate products manufactured by National Carbon Co., Inc., for various industries, are covered in catalog section M-8000-A. Charts and tables covering the physical and chemical properties of these carbon products, together with application and operational data are included.

21. Acid-proof brick floors that will not crease, groove, chip, dust off, or require patching, are described in a 16-page booklet being offered by Belden Brick Co. This type of flooring may be used to advantage in finishing plants as it is offered in smooth or non-skid surface and repels organic, physical, and chemical attack.

22. Research in the development of fans is covered in an 8-page folder offered by Ilg Electric Ventilating Co. This new booklet is almost entirely pictorial and lists many testing and research processes continually taking place in the development of improved fans and air-moving equipment.

PASTE IT ON A POSTCARD

This mailing coupon is a convenient size to paste on a penny postcard. **Circle the numbers of the catalogs you want** which correspond to the numbers on the descriptive paragraphs. Fill out the coupon **legibly** and **completely.** Paste it on a postcard, or put it in an envelope if you prefer, and mail it to Textile World, 330 W. 42nd St., New York 18, N. Y.

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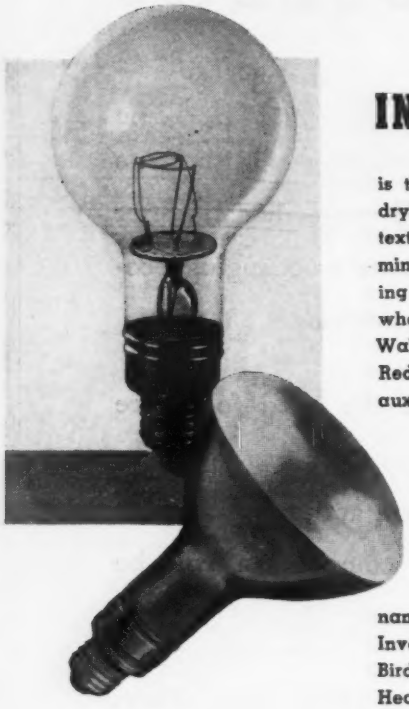

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NEWS ABOUT Suppliers

Southern States Chemical Co. has recently been incorporated in Georgia. Warehouses are located in Atlanta, Augusta, Charlotte, Greenville, and Savannah. The company will serve as distributor for Hercules products, and will also handle certain items from Philadelphia Quartz Co., Solvay Sales Co., Turpentine & Rosin Factors, Archer-Daniels-Midland Co., and Darco Corp. Officers follow: president, John R. Porter, Jr., of Atlanta; vice president, Stephen K. Davis, of Charlotte; secretary-treasurer, Mrs. Harriett D. Poggensee, of Tulsa, Okla. The general manager is H. M. Thompson, formerly Atlanta district manager of Hercules Powder Co., who resigned Mar. 31 after 19 years service, to organize this company.

Stauffer Chemical Co., New York, was scheduled to begin operations on Apr. 1 in its new $800,000 carbon bisulphide plant at Bentonville, near Front Royal, Va. Output will go primarily to the Front Royal, Va., plant of American Viscose Corp. C. M. Allen, transferred from Stauffer's Hammond, Ind., plant, is superintendent.

George M. Porges Associates, New York, have been appointed sales and service representatives for Dixie Mercerizing Co., Chattanooga, Tenn., in the metropolitan area.

JESSE M. SHELTON, who has been elected president of Robert & Co., Atlanta, Ga. He was formerly vice-president and treasurer. In the new office he succeeds L. W. Robert, Jr., who becomes chairman of the board. At the same election A. G. Stanford, C. E. Doughtie, Jr., and C. J. Shannon were named vice-presidents.

Foxboro Co., Foxboro, Mass., has appointed Walter H. Ridley to be head of its textile sales- promotion division. He was with James Hunter Machine Co. and Riggs & Lombard before joining the Foxboro staff last year.

National Starch Products, Inc., New York, have appointed Donald D. Pascal to the managership of their midwestern division with headquarters at Washtenaw Ave. and 36th Pl., Chicago, Ill. He joined the original National Adhesives organization 15 years ago, and has lately been technical assistant to Chester A. Gage, vice-president in charge of sales.

Sterling Ring Traveler Co. has appointed D. J. Quillen, of Spartanburg, S. C., to be its southern manager. He has represented Sterling in the south for a number of years.

E. I. du Pont de Nemours & Co., Wilmington, Del., has given recognition to the application of electronic technics to the development and produc-

RAISE CEILING ON PICKER-STICK BLANKS

Establishment of mill ceiling prices of $102 to $278 per 1,000 pieces of hickory picker stick blanks has been announced by OPA. Hickory picker stick blanks are made from live, tough hickory logs. The new maximum prices became effective Mar. 12, 1945, and are approximately 25% above the ceilings that producers previously could charge. They were established by OPA as a companion action to a WPB allocation order limiting the use of these blanks to the manufacture of picker sticks.

These prices are applicable to hickory picker stick blanks produced or concentrated in any State and will stabilize raw material prices for all picker stick manufacturers and Lend Lease procurement.

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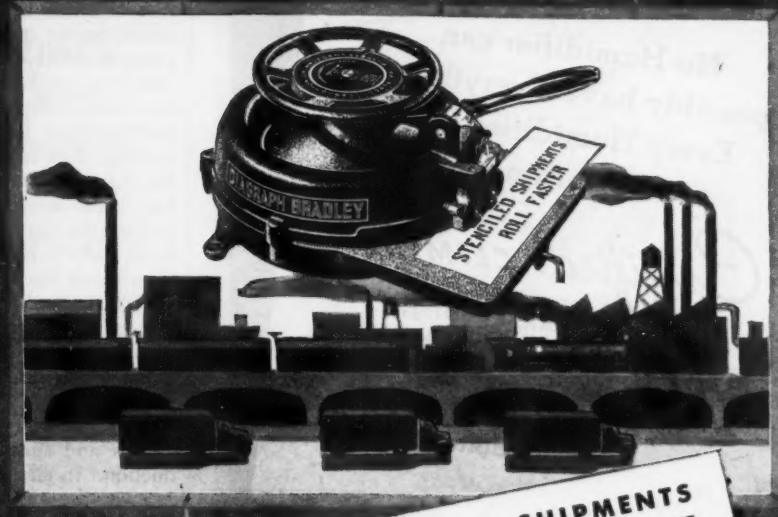

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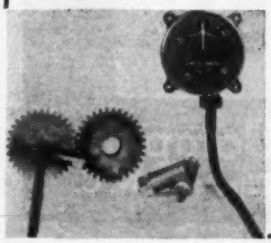

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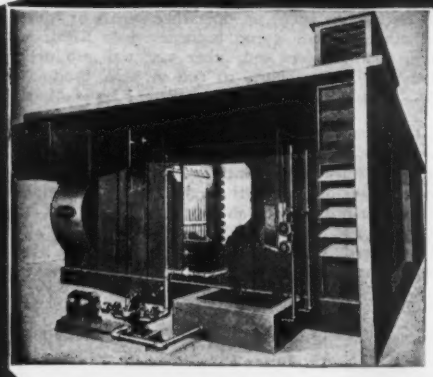

CENTRAL STATION

Parks-Cramer Company
Fitchburg, Mass. Charlotte, N. C.

tion of synthetic fibers by the establishment of an electronics group in its Rayon Department. The group will be started with Lawrence Philip Haner, whose transfer from the Rayon Pioneering Research Section to the Rayon Engineering Section has been made. His headquarters for the time being will be in Buffalo, N. Y. Dr. C. H. Greenewalt has been appointed an assistant director of DuPont's Development Department, effective Monday, Mar. 12, which is headed by Dr. E. K. Gladding. DuPont has passed the 100-mark in "E" awards and stars for war production. In all, 33 plants have received the "E" and a total of 70 stars have been conferred.

United States Rubber Co., New York—Harold ("Hap") B. Morris has been appointed technical representative of the Naugatuck chemical division, and Dispersion Process, Inc., in the Akron area.

Hercules Powder Co., Wilmington, Del., has appointed Hans A. Blum to succeed H. M. Thompson as acting manager in charge of sales and technical service in its Atlanta office at Rhodes-Haverty Bldg., Atlanta 3, Ga. Mr. Blum has been 15 years with Hercules. The company is concentrating on sales and technical service in connection with company-manufactured products. Hercules also reports the retirement of two of its directors, Charles C. Hoopes and George W. Norman, after 31 years service, having been associated with the company since it was organized. The two vacancies will be filled by Ralph B. McKinney, general manager of the paper makers' chemical department, and Dr. Wyly M. Billing, general manager of the synthetics department.

W. M. FRASER, who has been elected a director of Farrel-Birmingham Co., Inc., Ansonia, Conn., and a member of the operating committee. Farrel-Birmingham has purchased The Atwood Machine Co., as reported last month, and will continue to build Atwood textile machinery at the Stonington plant. Mr. Fraser has been made general manager of Atwood and will direct its operation. He has been with Atwood since 1938 as works manager and later vice-president.

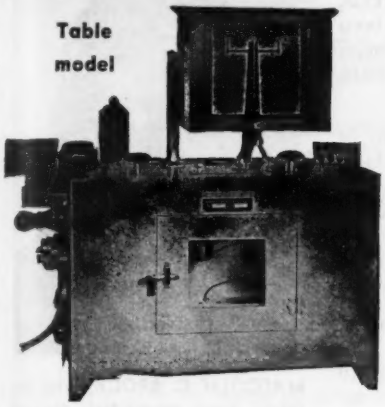
CLARENCE R. HOWE, who has been elected president and treasurer of US Bobbin & Shuttle Co., Lawrence, Mass., succeeding Thomas A. Francis. Walter J. Connolly was elected chairman of the board; Edward L. Martin, vice president; Wesley C. Carlson, clerk of the board; and William J. McGeough, general manufacturing manager. Mr. Howe has been identified with the textile industry for over 40 years, having been 19 years with Crompton & Knowles Loom Works, 19 years with T. C. Entwistle Co. as vice president, and lately vice president in charge of sales of US Bobbin & Shuttle Co.

S. C. Johnson & Son, Inc., Racine, Wis., entertained a score of advertising and editorial representatives from trade publications a few days before the company began civilian marketing of its new textile-treating product, Drax, on March 19. Harvey W. Blankenship, advertising and sales promotion manager for industrial products, introduced P. M. Petersen, general sales manager, and John H. Hurley, manager of the products finishing department, who detailed the plans. Drax has heretofore been restricted to military and naval use. The material gives a water-repellent dry-wax impregnation which will survive three or four launderings. Johnson will stress the treatment's dirt-resistent, clothes-preserving qualities.

The Foxboro Co., Foxboro, Mass., has apopinted Wm. A.

KNITTERS—

Table model



Eight-Basket Oven—Can be equipped with 8 Baskets—3" x 3" square, and 6" deep; or with 6 Baskets, 4¼" x 4¼" and 6" deep. Sets on table in space of 20" x 40".

Check Yarn Samples for Moisture

Test all your yarn, stock in process, and finished goods—for moisture content—with accuracy. Weighing can be made without opening the oven door.

EMERSON Ovens

Are built in different types to handle wool, cotton and silk. Equipped with baskets to fit the work. Write for details on EMERSON OVENS to fit your process.

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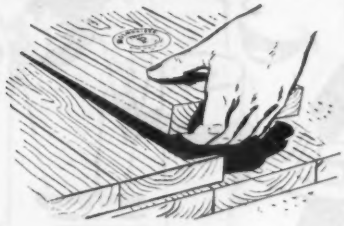
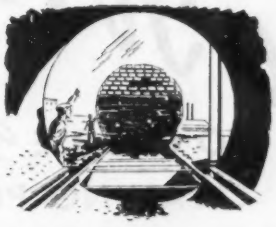
Treated Wood, YES



Wolmanized Lumber* is a building material that has a positive answer to the service-life question. It's alloyed for protection against rot and termites.

Pressure Treated, CERTAINLY



The Wolman Salts* preservative is deep in the wood, not just on the surface. Only pressure treatment in closed steel retorts can drive it there.

AND THE USUAL ADVANTAGES OF BUILDING WITH *Wood*

Build with Wolmanized Lumber and get all of wood's advantages: lightness, strength, resilience, insulating value, paintability—plus endurance that insures your investment

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Chief among the many reasons are these four: (1) All *Finnell* Cleaning Powders are compounded in *Finnell's* own mill . . . assuring consistently dependable quality throughout the entire line. (2) The quality is the same today as before the war—*Finnell* Powders still are available in their original pre-war formulae. (3) *Finnell* Powders are put up in quantities that best serve the individual needs of all users, from the smallest to the largest. For example, *Finola* is sold in cases of forty-eight 1¼-lb. sprinkle-top containers, in cases of twelve 5-lb. bags, and in 75-lb. drums, half-barrels, and 300-lb. barrels. (4) The *Finnell* line is complete as to floor cleaning powders, providing a single source of supply for all types.

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For Washroom Floors, Basins, Bowls, and for Heavy Duty Scrubbing

Century Scouring Powder
A Mild Abrasive Cleanser

Solar Soap Powder
Vegetable Oil Base

Rubber Cleaner
Endorsed by Rubber Flooring Manufacturers Association

Asesco Solvent Cleanser
All-Purpose Cleanser

Setol Mineral Oil Solvent
All-Purpose Cleanser, Heavy Duty

Han-Kleen Hand Soap
Heavy Duty

Han-Kleen Hand Soap
Heavy Duty but with Vegetable Base

Crystal Cleanser
For Dishwashing

Also

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Oil and Grease Absorbent

Killum
An Insecticide

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NEWS ABOUT SUPPLIERS

Rock as resident engineer in the Corpus Christi, Texas, area. James M. Tuttle has been added to the staff of engineers attached to Foxboro's Pittsburgh, Pa., office.

Chemical Pulp Division, of Buckeye Cotton Oil Co., Jackson, Tenn., will operate a $2,200,000 plant to be erected by the government which will produce pulp from cotton linters for use in smokeless powder.

L. B. Holliday & Co. of Canada, Ltd., dyestuff distributors with head office in Montreal, Que., recently appointed J. M. Shore as their representative in the province of Ontario. Mr. Shore has been in charge of the firm's Montreal laboratory for the last seven years. He succeeds J. A. Robertson who has become Ontario representative of Onyx Oil & Chemical Co., Ltd., of Montreal.

Allis-Chalmers Mfg. Co., Milwaukee, Wis., has reappointed F. S. Cockburn as field representative in Peru. He acted as an Allis-Chalmers representative in Peru for a number of years prior to the outbreak of the war. In his new assignment he will work in conjunction with the company's distributors for Peru, the Peruvian Trading Corp. He will be located at Casilla 2233, Lima, Peru, S. A. Allis-Chalmers has elected to its board of directors John Howard Collier, president of the Crane Co., Chicago.

The Reliance Electric & Engineering Co., Cleveland, Ohio, has appointed Robert J. Overstreet as representative in North and South Carolina,

MALCOLM C. BROCK, who has lately been appointed chemist in charge of the industrial division of Cuprinol, Inc., Boston, Mass. An article by Mr. Brock on mildewproofing thread appears in this issue.

and Eastern Georgia, with headquarters in Greenville, S. C. He was formerly employed by J. E. Sirrine & Co., Greenville, and more recently was shipyard electrical engineer at J. A. Jones Construction Co., Brunswick, Ga. Reliance has also appointed R. O. Herbig, since 1921 district sales manager in Chicago, to be central western sales manager of the company.

International Nickel Co., New York, reports that Donald J. Reese, who has been with the Steel Division of WPB at Washington, D. C., since April, 1942, has resumed his duties with International's Development and Research Division.

Link-Belt Co., Chicago, has promoted Richard B. Holmes, who has been general manager of the Atlanta plant, warehouse, and sales office since

BROWN INSTRUMENT CO., Philadelphia.—Veterans of World War II, honorably discharged from the Army, Navy, and Marine Corps, and reemployed by Brown Instrument Co., accept for their fellow war-workers the fourth Army-Navy "E" award received by the Brown Co. Seated, left to right: John Bodner, Alex. Blank, Orto Kugler, Leo Geese, George Strubel and Jim Shockley. Standing, left to right: H. H. Ehrhart, George Schwinn and Francis Nealis.

Card Setting Kept Accurate With the Modern Lubricant

Card bearings lubricated with NON-FLUID OIL are protected from wear by constant and dependable lubrication, since NON-FLUID OIL does not drip and leak. Doffer and Top Flats stay in adjustment, assuring clean, uniform sliver. Lubricant and application costs are reduced—In comb-boxes for example—NON-FLUID OIL outlasts liquid oil 6 to 8 times.

Write for instructive bulletin

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Southern Agent, Falls L. Thomason, Charlotte, N. C.
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NON-FLUID OIL
U.S. PAT. OFFICE & FOREIGN COUNTRIES
MODERN TEXTILE LUBRICANT

Better Lubrication at Less Cost per Month

"Our REPAIR PROGRAM includes new Rings"

Keeping existing machinery in good repair is extra important in these times. This applies particularly to rings, because this repair item frequently can add substantially to production. Use our Eadie oil-lubricated styles wherever applicable — but whatever the style, make sure your rings have the famous "DIAMOND" FINISH!

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SPINNING RING CO.
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Makers of Spinning and Twister Rings since 1873

DANA WARP MILLS
Westbrook, Maine

Cotton yarns, single and ply
Cotton warps, single and ply
Colored yarns and warps
Spun rayon—yarns and warps
Seamless grain bags.

ALDON SPINNING MILLS
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Spinners of Fine Woolen
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Yarns for All Purposes

French and English Spun Worsted
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Mr. C. F. Peffer, The Merchandise Mart, Suite 1076, Chicago 54, Ill.
Mr. Arthur Bone, 4436 Worth St., Los Angeles 33, California

TO MANUFACTURERS SEEKING AN EXPORT MARKET

Leading American Foreign Trader with record of 50 years successful operations in foreign markets is seeking additional lines of important American producers of cotton gray goods, cotton yarns, printed voiles and ribbons for distribution throughout the Orient and Latin America.

Head sales office for Latin America is established in Buenos Aires. Pre-war connections in the Orient will be immediately re-established when conditions permit. Sales agencies under guidance of experts experienced in each market.

If you are seeking clean aggressive representation write us details of your products for both immediate and postwar selling. If interested we will have a representative call on you for further discussions.

RA-182, Textile World
68 Post St., San Francisco 4, Calif.

Here's a take-up roll covering that's easier to apply . . .

"TEXALOX"

IF you want a take-up roll covering that's easily and quickly applied, try "TEXALOX"—it cements or glues into place in a jiffy. And it *stays* in place without creeping, bulging, or breaking! It draws *all* textiles—from heavy duck to delicate rayon—through the rolls evenly. And it can't cut or chafe fibres because the evenly spaced, uniformly sized granules grip the fabric firmly, gently and without vibration. What's more, "TEXALOX" retains its grip because it's sprayed with a metallic coating impervious to water, acid or dye.

"TEXALOX" take-up roll covering is still another example of how "CARBORUNDUM" Abrasive Engineers have helped to improve almost every industrial process through the proper use of abrasives. See if "TEXALOX" will improve *your* mill operation at our expense. Write for a free roll covering, giving length and diameter of the roll and the type of fabric your mill produces. Address your inquiry to The Carborundum Company, Niagara Falls, New York.

THERE IS A PRODUCT BY
CARBORUNDUM
TRADE MARK
FOR EVERY ABRASIVE APPLICATION

("CARBORUNDUM" and "TEXALOX" are registered trade marks of and indicate manufacture by The Carborundum Company)

1943, to the position of general manager of the company's Philadelphia plant operation, including its Olney Foundry Division. Rod S. Galloway district manager of the company's Pittsburgh office since 1943, has been named general manager of Atlanta plant operations, to succeed Mr. Holmes. Allan Craig has been made divisional manager of the southeastern division, with headquarters at the Atlanta plant.

The Firestone Tire & Rubber Co., Akron, Ohio, has established $2,000,000 laboratory for research on rubber and other plastic products. The laboratory was built under the personal supervision of John W. Thomas, chairman of the board, who was recently awarded the Gold Medal of the American Institute of Chemists, for his contributions to rubber research.

Westinghouse Electric Elevator Co., East Pittsburgh, Pa., has created two separate divisions to carry on the work of the company, the Air Conditioning and the Elevator Divisions. Ross Rathbun, formerly manager of air conditioning, has been appointed manager of the expanded Air Conditioning Division, which now includes the Precipitron; and Walker G. White, formerly sales manager, has been named manager of the Elevator Division. George F. Begoon, who for several years has directed commercial development of the Precipitron, has been named manager of the Precipitron Department of the Air Conditioning Division.

Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc., Passaic, N. J., has launched for the 1945 season Manhattan Victory Gardens, the 400-garden project that won the highest award of the National Victory Garden Institute for the last two years. James J. De Mario, advertising manager of the company, is chairman of the garden committee.

Walter Kidde & Co., Inc., Belleville, N. J., have purchased the Youngstown Miller Co., Inc., formerly of Sandusky, O., manufacturers of plastic coaters and oil reclaimers. On or before Mar. 31, all operations were scheduled to be transferred to 675 Main Street, Belleville, N. J., where orders on hand will continue to be filled under the direction of F. L. Gerin, who becomes vice president and general manager.

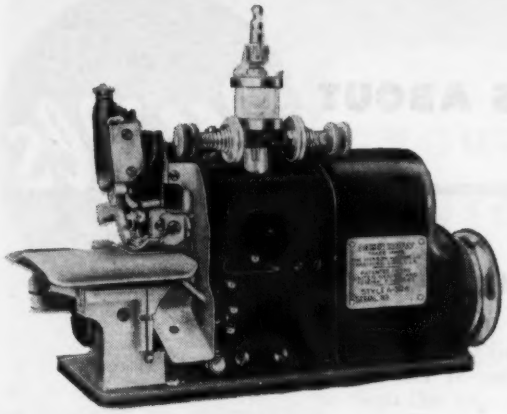
W. B. HOLTON, JR., president of the Walworth Co., New York, has been elected president of the Valve Manufacturers Association. Other officers follow: vice presidents, Lucien W. Moore, of Valve & Fitting Department of the Crane Co., J. P. Ferguson, of Reading-Pratt & Cady Division of American Chain & Cable Co., and C. W. Burrage, of Lunkenheimer Co.; secretary-treasurer: George A. Cooper, New York.

American Chain & Cable Co., Bridgeport, Conn., has appointed E. J. Flood as general district sales manager for the Chicago sales territories. Mr. Flood has been with the company for 25 years in the Page Steel & Wire and American Chain Division. He will continue his headquarters at 400 West Madison Street, Chicago.

Wickwire Spencer Steel Co., New York, has elected A. G. Bussmann as vice president in charge of sales. He was previously assistant to the president. He has been associated with the company since 1930 and was successively manager of the Wire & Springs Divisions, sales manager of the Buffalo District, general sales manager, and assistant to the executive vice president.

The Container Corp. of America has purchased an 8-acre site on the eastern outskirts of Greensboro, N. C., for the early construction of a large plant to make folded cartons and corrugated shipping containers for textile, furniture, and tobacco centers of the South.

Design & Management Corp,. New York, is the correct name of the company referred to in this column last month as "Machine & Management Corp."



Merrow Class A Machines, illustrated, have made possible quality production, high speed and low operating costs to a degree greater than ever before. They are easy to handle, simple to adjust, sturdy in design, accurate in workmanship and readily adapted to many kinds of work. Let us or our distributor nearest you demonstrate the work of these machines on samples of your own fabric.

TRADE MARK

MERROW HIGH SPEED

REG. U. S. PAT. OFF. AND IN FOREIGN COUNTRIES

OVEREDGING, OVERSEAMING AND HEMMING MACHINES

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WAR WORK DEMANDS

Quality Results—High Production
Convenient Handling
Minimum Time-Out for Adjustment or Repair—Low Upkeep Costs

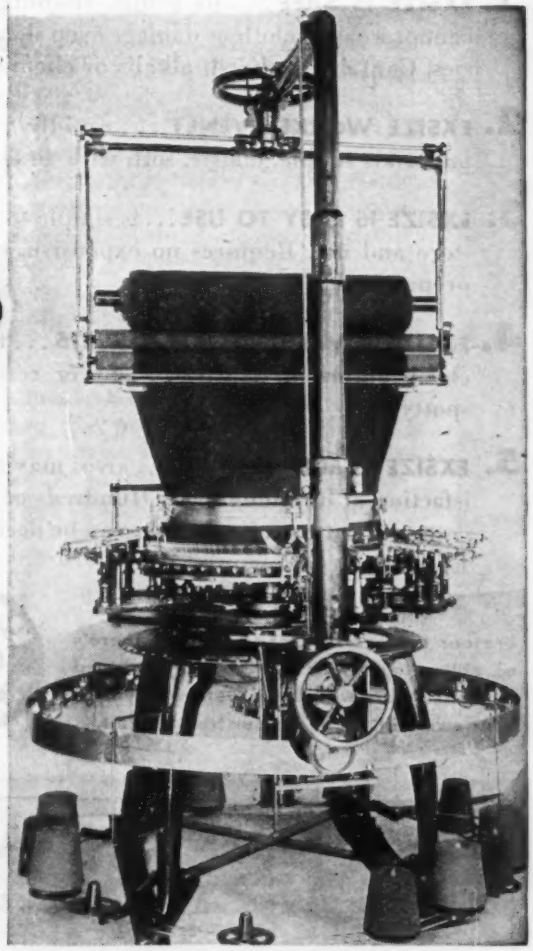
Obtain Maximum Quality Production by Using a Machine Suitably Arranged for Your Work — Our Distributors or Our Direct Representatives Are on Call to Advise You Suitable Machine Arrangements for Various War Work and Proper Care and Operation of Machine.

ESTABLISHED 1838 INCORPORATED 1894

THE MERROW MACHINE COMPANY
STARTING ITS SECOND CENTURY

2803 LAUREL STREET **HARTFORD 6, CONN., U. S. A.**

Single Head Spring NEEDLE Knitting Machine



PRODUCES 100 YARDS PER 8 Hr. DAY

The New S-1 Single Head Spring Needle Machine is especially designed for overcoating materials. At the same time, *any* fabric can be knit on it that is knit on the older type spring needle table!

Production is approximately 100 yards per 8 hour day, using 6 feeds.

Features: Electrical driven by V belt simplified motor drive . . . electrical yarn stop motion . . . and needle stop motion.

Install one of these machines today, and in a few hours after reaching the mill it will be ready for operation!

For details write us direct.

TOMPKINS BROS. CO., INC.
ONEIDA ST. **SYRACUSE, N. Y.**

DESIZE WITH EXSIZE

the natural enzyme desizer that leads on all 5 counts!

1. **EXSIZE IS SAFE** . . . its gentle, thorough action cannot weaken cloth or damage even sheerest fabrics. Contains no harsh alkalis or chemicals.

2. **EXSIZE WORKS EVENLY** . . . rapidly . . . leaves materials supple, elastic, soft, with good "hand."

3. **EXSIZE IS EASY TO USE** . . . is simple to prepare, store and use. Requires no expensive, elaborate preparation.

4. **EXSIZE GIVES UNIFORM RESULTS** . . . turns out clean, absorbent fabrics . . . never results in a spotty job.

5. **EXSIZE IS ECONOMICAL** . . . gives maximum satisfaction at minimum cost. Hundreds of yards of cotton or cotton-mixed cloths can be desized with Exsize for a few pennies.

Use our laboratories for your tests. There's no obligation. Or, if you prefer, a trained Pabst field man will gladly work with you in your own mill. Write for our free booklet.

PABST BREWERIES

Copr. 1945, Pabst Brewing Company, Milwaukee, Wisc.

PABST SALES COMPANY
CHICAGO, ILLINOIS
Warehouses at Jersey City, and Textile Warehouse Company, Greenville, S. C.

NEWS ABOUT *Mills*

Cotton Mill News

Alabama Textile Products Corp., Laurel Hill, Fla., has leased building at De Funiak Springs, Fla., and will equip it for a new branch mill.

Carolina Arts Co., Gastonia, N. C., has secured a location for a weaving plant and will begin operations at once. It also plans to establish a hosiery knitting plant in Gastonia as soon as 1,000 lb. of cotton yarn per week can be obtained.

Carufel Braid & Webbing Co., 46 Bucklin St., Pawtucket, R. I., plans rebuilding of portion of mill recently destroyed by fire, with loss reported over $40,000.

Cherokee Spinning Co., Knoxville, Tenn., has changed its name to the Cherokee Textile Mills.

Chicopee Mfg. Corp., Manchester, N. H., textile subsidiary of Johnson & Johnson, New Brunswick, N. J., has acquired the former mill of Victor-Monaghan Co., at Walhalla, S. C., and will operate it as a new branch plant for surgical gauze and similar materials. J. C. Platt, vice-president of purchasing company, will be manager at mill.

Erwin Cotton Mills, Durham, N. C., plans the sale of most of its 425 company houses, giving the present occupants first opportunity to buy, and then offering them for sale to Erwin employees who do not live in company houses.

Hamilton Cotton Co., Ltd., Hamilton, Ont., plans postwar expansion and mill improvements to cost over $700,000, including buildings and equipment.

Har-Mills Spinning Co., Dalton, Ga., owned by Sam Hardin and Sam Millender, both of Dalton, began operating as a textile mill last month.

Highland Park Mfg. Co., Charlotte, N. C., has let contract to Potter & Shackelford, Inc., Greenville, S. C., for repairs and improvements in No. 3 mill. J. E. Sirrine & Co., Greenville, are architects and engineers.

Metacomet Mfg. Corp., 302 Plymouth Ave., Fall River, Mass., has been chartered with capital of 1,000 shares, to operate a local cotton mill. Alfred S. Sherwin is president.

Pacific Mills, Lyman, S. C., have let contract to C. M. Guest & Sons, Anderson, S. C., for one story addition. Company has bought a 670-acre tract near Hurt, Va., for postwar expansion.

Wellington Spinning Corp., Ltd., Toronto, Ont., was recently incorporated to do a general textile manufacturing business, with capitalization of $350,000.

Wool Mill News

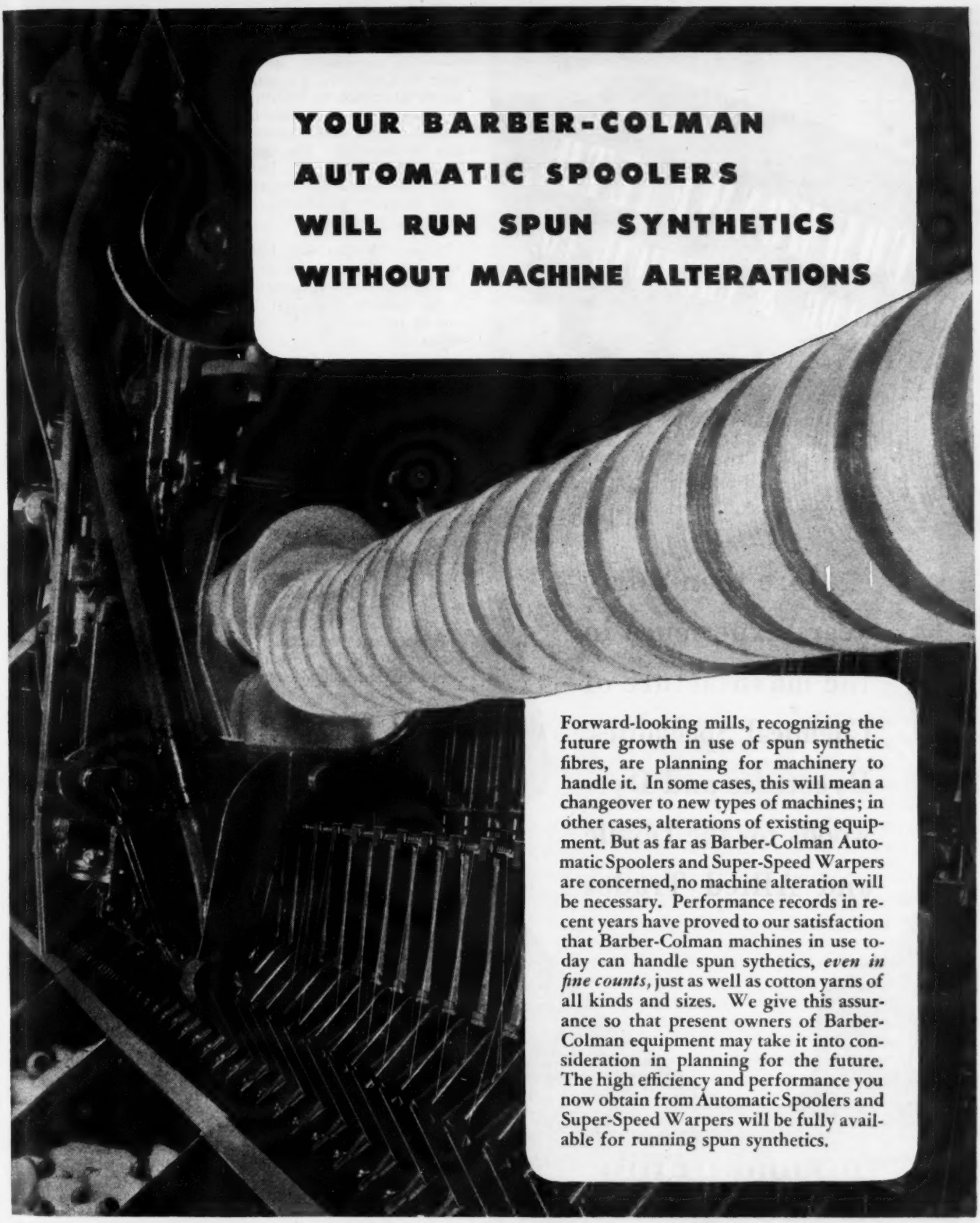
Artex Woolens Ltd., Hespler, Ont., is completing its expansion program. An addition, now being erected, is expected to be ready for use late in the spring. Cost of the new building and equipment to be installed is $140,000.

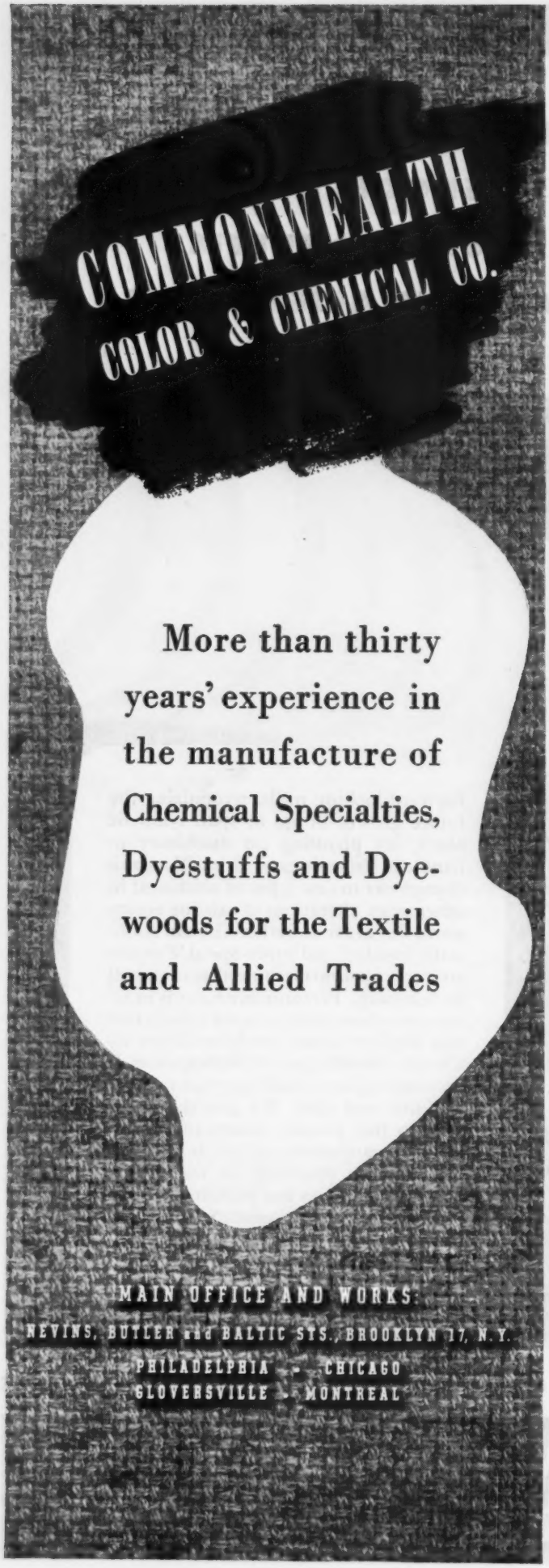
Barnes Worsteds, Inc., Kingston, Mass., recently chartered with capital of $100,000, plan operation of local mill. Philip S. Barnes, Elm St., Kingston, is president and treasurer.

Botany Dryspinners, Kincardine, Ont., is completing expansion of its plant at an estimated cost of $180,000.

Charlottesville, Va.—A large wool-textile firm already operating plants north and south has exercised its option for the purchase of a 300-acre tract of land in Fluvanna County, Va., for the erection of a woolen mill, which will cost $1,000,000 and employ approximately 800 persons. This is reported to be Uxbridge Worsted Co.

Esmond Virginia Co., Waynesboro, Va., has acquired


YOUR BARBER-COLMAN
AUTOMATIC SPOOLERS
WILL RUN SPUN SYNTHETICS
WITHOUT MACHINE ALTERATIONS
Forward-looking mills, recognizing the future growth in use of spun synthetic fibres, are planning for machinery to handle it. In some cases, this will mean a changeover to new types of machines; in other cases, alterations of existing equipment. But as far as Barber-Colman Automatic Spoolers and Super-Speed Warpers are concerned, no machine alteration will be necessary. Performance records in recent years have proved to our satisfaction that Barber-Colman machines in use today can handle spun sythetics, *even in fine counts,* just as well as cotton yarns of all kinds and sizes. We give this assurance so that present owners of Barber-Colman equipment may take it into consideration in planning for the future. The high efficiency and performance you now obtain from Automatic Spoolers and Super-Speed Warpers will be fully available for running spun synthetics.
AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • DRAWING-IN MACHINES
BARBER-COLMAN COMPANY
ROCKFORD • ILLINOIS • U. S. A.
FRAMINGHAM, MASS., U. S. A.
GREENVILLE, S. C., U. S. A.
MANCHESTER, ENGLAND


COMMONWEALTH
COLOR & CHEMICAL CO.
More than thirty years' experience in the manufacture of Chemical Specialties, Dyestuffs and Dyewoods for the Textile and Allied Trades
MAIN OFFICE AND WORKS
NEVINS, BUTLER and BALTIC STS., BROOKLYN 17, N.Y.
PHILADELPHIA - CHICAGO
GLOVERSVILLE - MONTREAL

additional equipment moved from the Lynchburg, Va., plant which was closed in February. Increased personnel, building extension, and double production are expected. The company manufactures crib blankets, piece goods and infants' wear materials, in addition to filling war contracts.

Johnson Woolen Mills, Ltd., Waterville, Que., was recently damaged by fire which started in the spinning room, and destroyed the carding room and offices.

Puritan Woolen Mills, Philadelphia, Pa., sustained a fire loss in warehouse and shipping department, which destroyed large stock of supplies.

Sun Fibers Corp., Mount Holly, N. C., has been chartered to manufacture merino yarns, mixtures of wool and cotton, mostly for military needs. It is a subsidiary of American Yarn & Pressing Corp.

United Yarn Co., Philadelphia, Pa., recently suffered a loss of $30,000 by fire which destroyed yarn and machinery in the picking house.

Yarmouth Rug Mills, Inc., East Main St., Ware, Mass., recently organized with capital of 1,000 shares, plans operation of a local mill. Florence Manasas, 155 Vernon St., Worcester, Mass., is treasurer.

Wyandotte Worsted Co. plant, in Rochester, N. H., is building an addition. The W. L. Bailey Co. of Boston has construction contract.

Rayon & Silk Mill News

American Viscose Corp. has purchased a site on the banks of New River across from Radford City, Va., for the postwar erection of a plant to produce rayon fiber. Construction will begin as soon as critical materials are released. The plant will employ approximately 1,000 persons when put into operation.

Caron Corp., Manchester, Conn., has been incorporated to manufacture fabrics and yarns with an authorized capital of $10,000. Incorporators are Doris Rosenfield, Helen Schatzberg, and Mildred Yusim of New York.

E. I. du Pont de Nemours & Co., Martinsville, Va., has received WPB approval to extend shipping and storage facilities at the Martinsville, Va., plant. The project will cost approximately $400,000, and will expedite handling of heavier deniers of yarn for military uses.

Monterey Textile, Inc., Los Angeles, Calif., has been incorporated in Delaware with 5,000 shares of no par value capital stock. California agent is H. E. Higginson, 817 Van Nuys Building, Los Angeles, Calif.

Stark Bros. Ribbon Corp., Granby, Que., has plans for one-story addition to cost about $50,000, and will begin erection soon. M. W. Roth, 204 Notre Dame St. West, Montreal, Que., is architect.

Sutton Silk Mills, Ltd., Sutton, Que., plan a one-story addition, reported to cost about $100,000, with equipment.

Textron, Inc., New York.—Transfer of control of the Manville Jenckes Corp. to Textron, Inc., in Rhode Island became assured when it was announced in Providence that holders of more than 95% of the company's preferred and common stocks had accepted the recent offer of purchase, and that payment of $5,260,866 was made to holders of stock already deposited under the offer, details of which were given in this column last month. Textron, Inc., now represents integration from the initial production of rayon yarn to the making and selling of rayon garments to the retail trade.

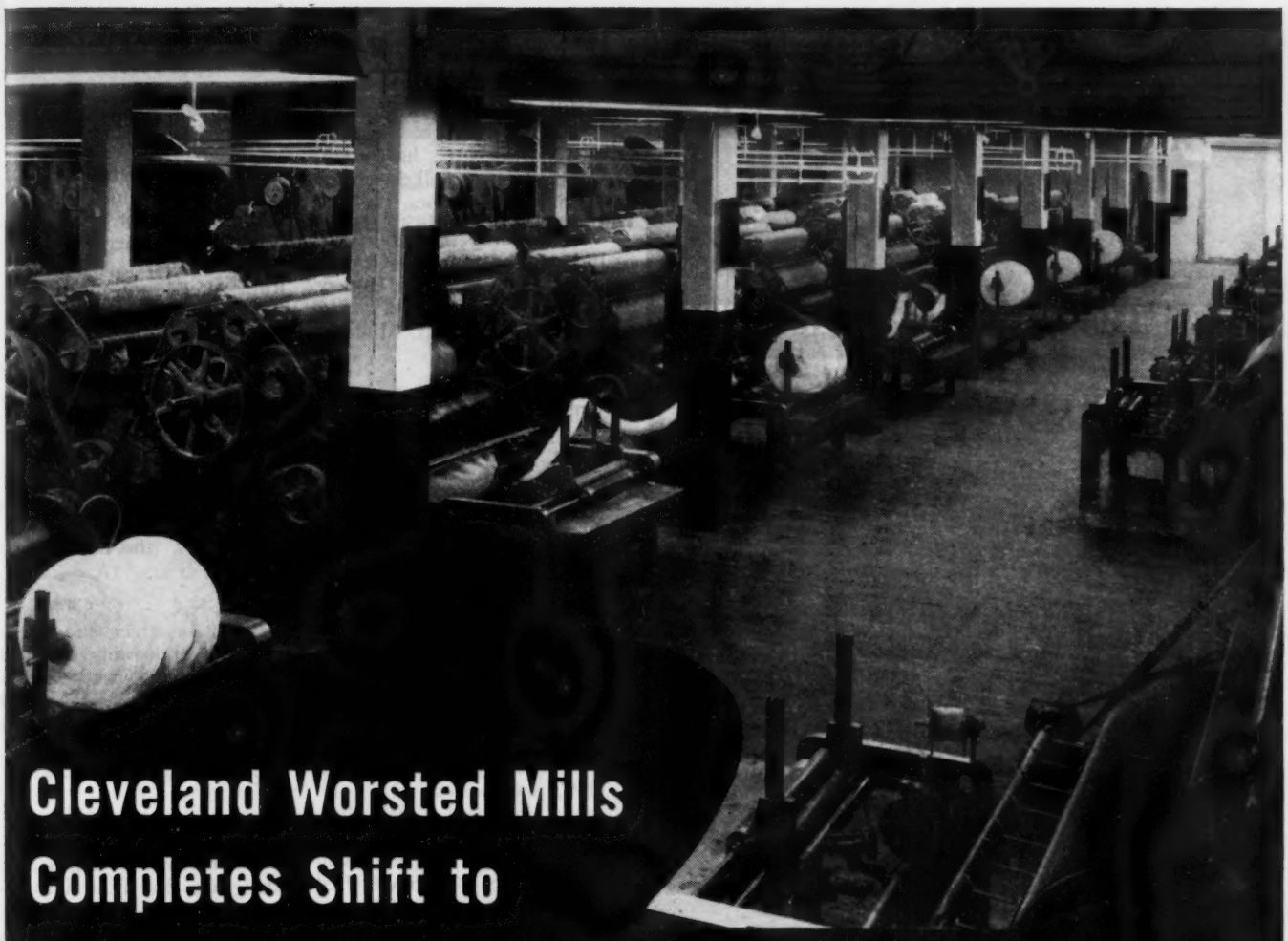
U. S. Rubber Co., Textile Division, Scottsville, Va., will expand equipment and facilities at local rayon tire cord mill, to cost about $50,000.

Knitting Mill News

Amknit Fabrics, Inc., Mount Holly, N. C., has been formed with authorized capital of $150,000, to engage in a general knitting business. Fowler Jackson and I. M. Gorse, both of Mount Holly, and Fred B. Helms, of Charlotte, were listed as the incorporators.

Biron Knitting Mills Ltd., Berthierville, Que., destroyed by fire late last year, is erecting a new building which will be ready for occupancy in April. The new mill is a two-story structure, 50x66 ft. and 50x85 ft.

Catawba, N. C.—W. R. Keith, formerly superintendent



Cleveland Worsted Mills Completes Shift to *Proctor* METALLIC CARDS

SURVEY SHOWS PRODUCTION GAINS AT NEW LOW COST

Some time ago the Cleveland Worsted Mills replaced 66 old cards with 12 entirely new Proctor Metallic Worsted Cards and had 7 cards reclothed with Proctor Metallic Wire. A survey conducted in their plant by Barnes Textile Associates, Inc., of Boston, Mass., revealed the following amazing facts. The new cards operated in slightly more than ¼ of the floor space formerly required. The new cards and the reclothed cards increased production 185.6% per card. Average production per card was 92.67 lbs. as against 32.54 lbs. per old card. The quality of the card sliver actually improved along with the increased production. Big savings in labor and power consumption were further revealed. Realizing what Proctor Metallic Cards offer in operating advantages—Cleveland Worsted Mills have now discarded the seven cards which had merely been reclothed—and replaced these with six new cards. The entire card room is now complete with 18 of the latest type Proctor Metallic Cards. Here is concrete evidence of how one progressive mill has proven the performance of this equipment. The full story of the earlier survey and the recent complete shift to Proctor Metallic Cards is available to anyone contemplating revamping or installing a card room. Write today for details.

PROCTOR & SCHWARTZ • INC • PHILADELPHIA 20 • PA

WHITMAN YARNS

WORSTED · COTTON · SPUN RAYON

WHITMAN SERVICE
1852-1944

During 92 years The William Whitman Company, Inc., and its predecessors have served the interests of important mills and users of yarns, seeking to establish for its customers a steady flow of dependable, quality yarns.

ARLINGTON MILLS
LAWRENCE, MASS.

Bradford Spun Worsted Yarns, Natural and Slub-dyed Colors and Mixes.

MONOMAC SPINNING CO.
LAWRENCE, MASS.

French-spun Worsted and Merino Yarns. Specialty Yarns—Rabbits Hair, Rayon, Acetate and Other Blend Yarns.

NONQUITT MILLS
NEW BEDFORD, MASS.

Cotton and Spun Rayon Yarns, Merino Blends, Specialty Rayon and Wool Mixtures.

WILLIAM WHITMAN COMPANY, INC.
SELLING AGENTS

BOSTON, 78 Chauncy St. NEW YORK 261 Fifth Ave.
PHILADELPHIA, 1600 Arch St. CHARLOTTE, Commercial Bank Bldg.

of Elliott Knitting Mills, Inc., and C. B. Gilbert, banker, both of Catawba, N. C., have established a knitting mill there with 32 knitting machines.

Chadbourne Hosiery Mill, Inc., Burlington, N. C., has purchased Larkwood Hosiery Mill, Charlotte, N. C., and Black Hosiery Mills, Midland, N. C.

Cleveland, Tenn.—C. A. Miller, vice-president, Cherokee Hosiery Mill, Cleveland, has leased a local building for establishment of new mill for men's half-hose.

Cordelia Hosiery Shops, Inc., Greensboro, N. C., was chartered recently to manufacture, buy and sell hosiery of all kinds with authorized capital stock of $100,000; subscribed stock, $300 by W. H. Holderness, Kenneth M. Brim, and Frances W. Bobb, all of Greensboro.

S. Godfrey Ltd., Toronto, Ont., and Boston, Mass., recently purchased capital stock of Joseph Simpson Sons Ltd., knitted goods manufacturers in Toronto. S. Godfrey, Used Goods Administrator of the Canadian Wartime Prices and Trade Board, is president.

Granada Industries, Inc., Granada, Miss., will build a new one-story addition to hosiery mill as a postwar project, estimated to cost about $200,000, with equipment. Erection contract has been let to Currie & Curley, Raleigh, Miss.

Hudson Hosiery Co., Charlotte, N. C., has been formed to take over and consolidate Hudson Silk Hosiery Co., Hudson Silk Knitting Mills, and Oakhurst Knitting Mills, all of Charlotte, with Fritz Seifart as president. Postwar expansion plans will boost employees from 1,100 to 2,000.

Pioneer Hosiery Mills, Chattanooga, Tenn., have approved plans for one-story addition and will carry out erection with day labor.

Rockford Mitten & Hosiery Co., Rockford, Ill., has given contract to John Gustafson, Rockford, for remodeling and improving mill.

SeLing Hosiery Mills, Nashville, Tenn., have been purchased by Sam Burd and Martin Burd, operators of the Lycoming Hosiery Co. The deal is reported to involve a sum of over $750,000. Maclin P. Davis, president of the SeLing Hosiery Mills, and the other officials of the company, will remain for the present.

Smart-Sox, High Point, N. C., has been formed with authorized capital of $100,000 to manufacture hosiery. Incorporators are Horace S. Haworth, Ruth Rendeau and Owen Reese, all of High Point.

Williamsport Hosiery Corp., Williamsport, Md., has changed its name to Willcraft Hosiery Mills, Inc.

Windy City Knitting Mills, Inc., Windy City, N. C., recently was organized with an authorized capital of $100,000, to engage in the manufacture of men's socks.

York, S. C.—J. C. Cloninger, president, manager, and cotton buyer for York Mills, Inc., and treasurer of Neely Cotton Mills, Inc., both of York, will soon establish an underwear plant in the Rose Hotel Bldg., which he recently purchased.

Processing Plant News

International Dyeing & Finishing Co. has been incorporated in Los Angeles, Calif., with capital of $25,000. Corporation is represented by Morris Abraham, 215 West Seventh St., Los Angeles, Calif.

Rock Hill Printing & Finishing Co., Rock Hill, S. C., has awarded contract to M. Lowenstein & Sons, Rock Hill, for six warehouse buildings at West White and Laurel Sts., totaling 48,000 sq. ft. floor space, to cost over $100,000.

U. S. Finishing Co., Norwich, Conn., has closed bids for one-story addition and improvements in present buildings, to cost over $50,000.

Miscellaneous Mill News

Barnhardt Bros. Elastic Corp., Charlotte, N. C., has been organized by William H. Barnhardt with an authorized capital of $100,000 to distribute "Lastex" elastic thread to 13 southern states. Officers are Mr. Barnhardt, president; Adam Clement, vice president; and Ray Spooner, secretary.

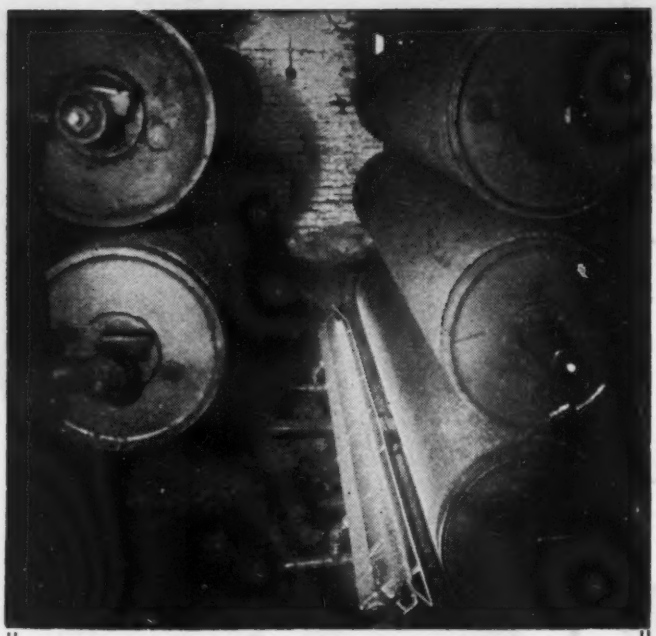
Millhiser Bag Co., Richmond, Va., has established a plant at North Wilkesboro, N. C. Six automatic looms, each with a capacity for making fabric for 35,000 bags daily, have been installed in a part of the Coffey Bldg.

HERE'S how to make your hosiery line the smoothest in the world! Give it the ARKO finishing touch . . . the ARKO beauty treatment!
ARKO FINISHES
make your HOSIERY
★ LOOK wonderful — soft and sheer!
★ FEEL luxurious — smooth and resilient!
★ LAST satisfyingly — snag and run resistant, water-repellent and spot-proof!
Ask for one of our technical experts to demonstrate the one-bath treatment with ARKO-FINISHES.

ARKANSAS CO., INC.

Manufacturers of Industrial Chemicals for over 40 years

Newark New Jersey



RED RAY RADIANT HEAT BURNERS SPEED UP DRYING OF THICK FELTED GOODS

A single 119 inch Red-Ray Burner applied to cans for drying inch thick felted material. Drying speed increased 60 per cent.

WRITE FOR COMPLETE DETAILS

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Southern Representatives:

CAROLINA SPECIALTY COMPANY — CHARLOTTE, N. C.

New England Representative: G. D. YEATON, Hornbine Road, Swansea, Mass.

Canadian Representative: RUDEL MACHINERY CO., LTD., 614 St. James St., W., Montreal, Can.

SCOURING WETTING PINE-SOLVENT BLEACHING DYEING

CUT TIME AND COST—IMPROVE RESULTS IN ALL WET PROCESSING WITH BURK-SCHIER PINE SOLVENT XX

Burk-Schier Pine Solvent XX Reduces Surface and Interfacial Tensions . . . Wets, Penetrates, Suspends, Disperses . . . Aids Detergents and Dyes. A Little Does a Lot and Does It Well.

COTTON: In the kier, Pine Solvent XX brings the liquor in contact with every fiber, leaves uniform bottoms that dye and finish more evenly. Boiling time is cut. Fibers are softer, fuller, more resistant to age-discoloration.

WOOL: Pine Solvent XX is valuable in raw-wool scouring . . . irreplaceable in fulling. From the raw stock it produces clean, soft, really white wool in prime condition for storage or further processing. In the fulling mill, it cuts time as much as 30% . . . costs no more . . . helps you meet contract delivery dates on time.

RAYON: In boiling off, Pine Solvent XX rapidly emulsifies gelatinous materials . . . is safe for the most delicate fabrics. Used in dyeing, it makes the fabrics wet out and sink quickly.

DYEING: Pine Solvent XX makes dye liquor penetrate the hardest fibers and heaviest seams. It gives an even, level deposit of dyestuff of uniform depth throughout every fiber. Loose dyestuff and impurities are suspended for washing out completely.

PRINTING: In printing paste, Pine Solvent XX wets pigments thoroughly, disperses them evenly, and holds them in suspension without agglomeration and until the design is on the fabric. Designs are sharp, colors bright and clear, no specks are formed.

BURKART-SCHIER CHEMICAL CO.
CHATTANOOGA, TENNESSEE

MANUFACTURING CHEMISTS FOR THE TEXTILE INDUSTRY

NEWS ABOUT Men

Harold Chapell has become president and treasurer of Cleveland Silk Mill, Cleveland, Tenn. He was formerly a member of the sales staff of American Bemberg Corp.

Sigmund Odenheimer has been elected president of Lane Cotton Mills, New York. Formerly vice president, he succeeds his father, **Sigmund Odenheimer**, who was elected chairman of the board.

W. M. McLaurine, until Mar. 1 secretary and treasurer of American Cotton Manufacturers' Association, has been appointed director of foundations for North Carolina State College, Raleigh, N. C. He will serve as coordinator of pro-

C. M. Bowden Replaces T. O. Ott, Jr., as Southern Editor of TEXTILE WORLD

C. Mallard Bowden, formerly of Riverdale Mills, Enoree, S. C., has joined the TEXTILE WORLD staff as southern editor in the Carolinas, replacing Thomas O. Ott, Jr., who has resigned to accept a position with J. E. Sirrine & Co., Greenville, S. C.

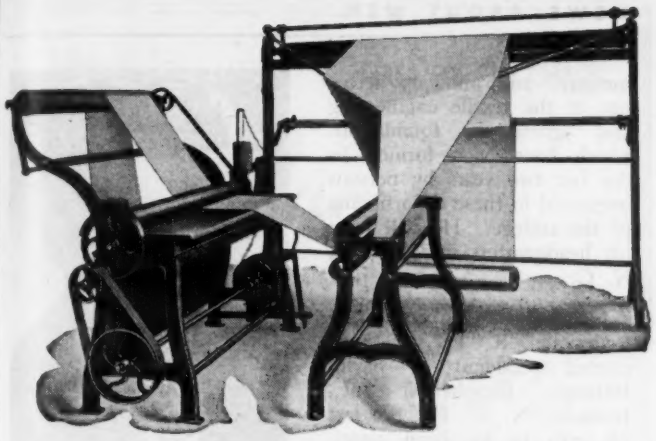
C. M. Bowden

Mr. Bowden was born 35 years ago in Jacksonville, Ala. His manufacturing experience has included eight years with Thomaston Cotton Mills, Thomaston, Ga., originally as industrial engineer and later as overseer of spinning. He has also served as industrial engineer of Marshall Field & Co., Spray, N. C., and as production engineer at Bell Aircraft Corp., Buffalo, N. Y. Just previous to joining TEXTILE WORLD, he was night superintendent at Riverdale. During his mill career he has improved upon his B.A. degree from the University of Alabama, where he majored in English and journalism, by taking courses in textiles and industrial management through the George School of Technology and the International Correspondence Schools.

These activities well qualify Mal Bowden to fill the editorial shoes of his predecessor, not an easy task. Tom Ott, a graduate of the Georgia School of Technology, built an enviable record for himself through his authoritative articles during his three-year tenure as southern editor; and through his entire career—which has included connections with Callaway Mills, Jordan Mills, Meritas Mills, and Du Pont Rayon—he has consistently won the respect and friendship of his associates and business acquaintances. His abilities will well serve the Sirrine organization.

T. O. Ott, Jr.

Mr. Bowden's headquarters will be in Charlotte, N. C., rather than in Greenville, S. C., where Mr. Ott was located. The change makes possible a better geographical balance with the office of Earle Mauldin, southern editor in Atlanta, and thus will improve TEXTILE WORLD'S service to the southern area.—Edwin D. Fowle, Publisher and Editor.



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Sewing any length stitch up to 1¼ in., making a firm, strong stitch for any weight or width of goods. This machine is equipped with our latest oscillating needle bar sewing head, which makes it the fastest tacking machine on the market for tacking the selvages of woolen and worsted fabrics. For further information, send for our catalog.

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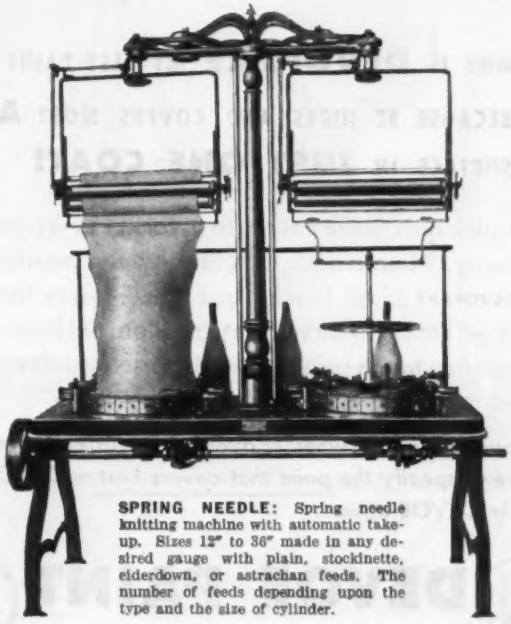
KNITTING MACHINES

meet the need for Speed—
for Quality and Low Cost



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CRANE Knitting Machines meet the demands of rapidly changing patterns and styles. Their middle name is *versatility* . . . plus smooth, fast running operation that eliminates expensive stops. Among their exclusive features are patented hardened Wing Burr Wheels and patented Thread Stop Motion. There's many a Knitting Mill in which batteries of Cranes are the mainstay of production.

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Spring Latch Needle
KNITTING MACHINERY

Q. WHY IS **DEVOPAKE** MY BEST PAINT BUY?

A. BECAUSE IT HIDES AND COVERS MOST **ANY** SURFACE IN **JUST ONE COAT!**

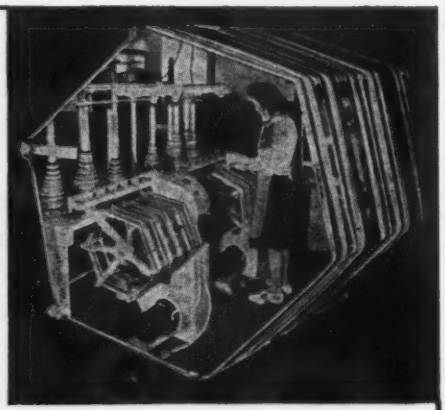
This quick quiz is the answer to **DEVOPAKE'S** ever-growing popularity. Maintenance men find by comparative tests that **DEVOPAKE** hides best in one coat — saves time and money — covers more surface per gallon. Oil base — and that means a **tough** paint that really wears, stands repeated wash-downs.

For your next job — whether over brick, plaster — most any surface — specify the paint that covers best — DEVOPAKE. Call the DEVOE agent.

DEVOE PAINT

787 FIRST AVENUE, NEW YORK 17, N. Y.

While one machine winds skeins, operator doffs other unit.



20% to 30% more skeins an hour..

up to 50% less floor area..

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TWIN-UNIT SKEIN REELING SYSTEMS

Twin-unit System keeps your operators "on top of the work" with less fatigue. Collapsible arms on reels. Doffing a simple one-arm operation. Automatic yardage control. 50- to 60-second doffing cycle. Compact construction saves space, steps.

Two types. Double-End to wind 12 skeins, designed for rayon, nylon and the finer counts of yarn. Equipped with adjustable reels for skeins 33" to 60". Variable speed drive, 150-400 R.P.M.

Single-End, 6 skeins, for worsted and coarser counts of yarn. Operating speed, 103 R.P.M. Can be equipped with larger reel for skeins, 45" to 75" circumference. Single-End types may be equipped with variable speed. Write for bulletin.

FIDELITY MACHINE COMPANY

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motional and publicity activities of the textile engineering and agricultural foundations which have been formed in the last two years by persons interested in these departments of the college. He will have his headquarters in Charlotte, N. C.

George E. Sinkerson, of Saylesville, R. I., has been elected president of Sayles Biltmore Bleacheries, Inc., Biltmore, N. C. For the last 20 years he has been associated with the parent company, Sayles Finishing Plants, Inc., and for the last five years has been vice-president. **Samuel M. Fessenden** and **John Hutton** have been elected vice presidents.

F. H. Leslie, of Leslie & Co., New York selling agents, was recently elected vice president of Clinchfield Mfg. Co., Marion, N. C., and president of Hart Cotton Mills, Tarboro, N. C. He succeeds his father, the late H. M. Leslie, in these positions.

William D. Schramm was elected chairman of the board of directors of Stead & Miller Co., Philadelphia, Pa., at a recent meeting. Other officers include **John D. Bowen,** president and treasurer; **Ormond Rambo, Theodore M. Schramm,** and **Theodore M. Hillsley, Jr.,** vice presidents; **Sherwood James,** secretary and assistant treasurer and **George E. Ingersoll** and **Howard H. Whittle,** assistant vice presidents.

Maurice Hendrick, has been elected president and treasurer of the Cliffside Mills, Cliffside, N. C. He succeeds **Charles H. Haynes** who resigned after 44 years of service. **Herman Cone,** was elected vice-president; **H. M. Owens,** secretary; **M. R. Reed,** assistant secretary, and **M. A. Breaden,** assistant treasurer.

FREDERICK L. BISSINGER, head of the patent department since 1942, was recently elected secretary of Industrial Rayon Corp., Cleveland, Ohio, to succeed D. S. Mallory, who continues as treasurer. Mr. Bissinger will remain in charge of the patent department.

Frank I. Neild, of New Bedford, Mass., was among prisoners of war released from Santo Tomas in Manila, Philippine Islands. Formerly president and agent of Neild Mfg. Co., in New Bedford, and a past president of the National Association of Cotton Manufacturers, Mr. Neild left New Bedford in 1941 to assume general managership of textile mills for the Philippine Government.

Thomas D. Russell has been elected president of Russell Mfg. Co., Alexander City, Ala., to succeed his brother, Benjamin C. Russell, who died recently. He has been with

JULES D. LIPPMANN (center) was elected president of Textileather Corp., Toledo, Ohio, and L. H. GREEN (right) former president, was named chairman of the board. Other officers elected include C. A. COLLIN, vice-president; W. F. WEBB, secretary-treasurer; and H. E. COLLIN (left), chairman of the executive committee.

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For Circular, Full Fashioned, Tricot and Milanese Knitting Frames, also Narrowing, Stand, Transfer Points and Welt Hooks for Full Fashioned Machines; Slides, Sinkers, Jacks, Guides or Flat Eyes, Sley and Milanese Points, Transfer Points or Quills, etc.

Sheet Metal Specialties to Order

NEW BRUNSWICK NEW JERSEY

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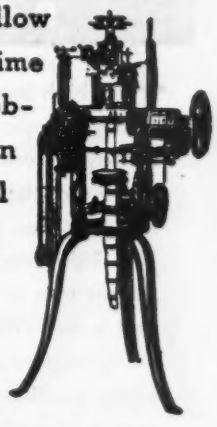
PREPARE FOR *Peace*

WE are here to supply what the country needs most—in War, or in Peace. • Right now —Uncle Sam says— "Build for War". When he says— "Build for Peace" – Brinton will follow the command. • In the meantime think about your Peace Problems and in terms of Brinton Knitting Machines. • We shall be glad to figure with you now, for peace-time requirements.



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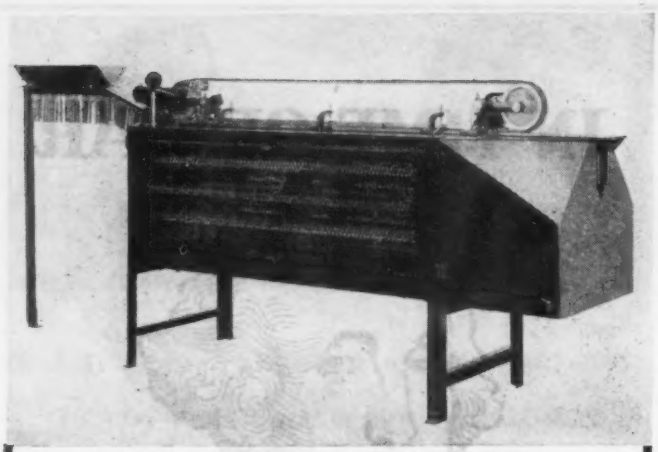

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LOOM BOBBIN STRIPPER
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RAYON YARNS
The **Terrell Machine Co.,** *Inc.*
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Can be Furnished Promptly from St. Louis Stock

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the company for 20 years and was vice-president and general manager.

Arthur Besse was re-elected president of NAWM at the annual meeting conducted largely by proxy because of ODT restrictions. **Moses Pendleton,** American Woolen Co., and **Franklin W. Hobbs,** Arlington Mills, were re-elected vice presidents; and three newly-elected vice presidents are **Carroll B. Newell,** Cyril Johnson Woolen Co., **Frederick W. Tipper,** Cascade Woolen Mill, and **Harold J. Walter,** Uxbridge Worsted Co.

Robert Gregory, assistant treasurer of H. E. Bradford Co., Inc., Bennington, Vt., has been elected to the executive committee of the Underwear Institute, New York.

Oscar W. Fishel, of Standard Knitting Mills, Cleveland, Ohio, has been re-elected to the presidency of the National Knitted Outerwear Association at the 27th Annual Meeting of the board of directors in New York, Mar. 27. This took the place of the annual meeting suspended at request of ODT.

Stanley C. Kingsbury, formerly with John T. Slack Corp. and recently superintendent of Lawrence Blanket Co., has joined R. C. Harvey Co., Waltham, Mass., as textile engineer in charge of all reworked and reprocessed wools, specializing on development of automobile fabrics.

R. Grady Rankin, for the last 10 years director of textile interests for Duke Power Co., maintaining his home in Charlotte, N. C., will relinquish his duties with the company on May 1, to become president of Superior Yarn Mills, Mount Holly, N. C., and treasurer of Republic Cotton Mills, Great Falls, S. C. He will make his home in Gastonia, N. C.

Lucius B. Cranska, president and treasurer of Cranska Thread Co., Worcester, Mass., has been appointed a member of the Industrial Thread Advisory Committee for OPA.

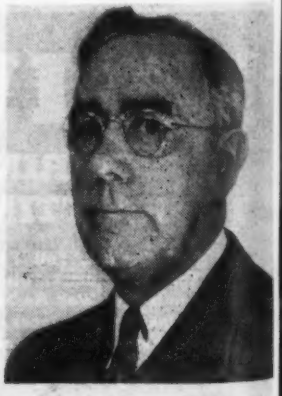
John W. Nickerson, director of the Management Consultant Division, WPB, since Aug. 1942, has resigned to return to private business in New England. He is succeeded by **James H. Eddy.**

Donald K. Woodward, vice president and general manager of Mills, Inc., one of the Royal Little controlled group of mills, has been elected vice-president and general manager of Textron, Inc. Mr. Woodward will be in charge of both manufacturing and merchandising operations of Suncook Mills, Suncook, N. H., and of the throwing plant in Lowell, Mass.

H. C. McKenna was recently promoted to vice president and general manager of New Braunfels Textile Mills, Inc., New Braunfels, Texas. **E. H. Knox** has been made superintendent.

C. Ralph Ewing, manager of Central Franklin Process Co., Chattanooga, Tenn., has been elected vice president of Franklin Process Co., Providence, R. I.

J. I. Armstrong, of Toronto, was recently appointed deputy



L. S. HALL (right), superintendent of Goodyear Clearwater Mills, Rockmart, Ga., since 1936, has retired and will be succeeded by E. A. ROWELL (left) assistant superintendent.

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Assures rapid, dependable de-sizing
Our technical staff always at your service.

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John: Douglas Crown Thin Boiling Starch is made in all fluidity ranges to suit each individual mill's requirements. Let's arrange for a trial order of the type recommended for our purposes.
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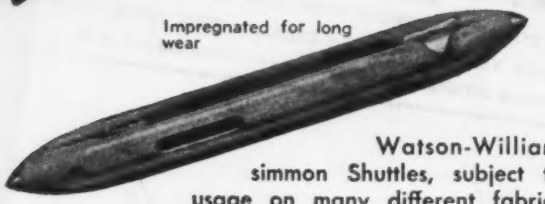
PERSIMMON SHUTTLES



Watson-Williams Persimmon Shuttles, subject to long usage on many different fabrics have passed every test of wear and faultless operation.

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NORTHERN REPRESENTATIVE: G. C. Burbank, 32 Beaconsfield Rd., Worcester 2, Mass. SOUTHERN REPRESENTATIVES: John W. Littlefield, 810 Woodside Bldg., Greenville, S. C.; Walter F. Daboll, 703 Jefferson Bldg., Greensboro, N. C.

NOVELTY-YARNS For WEAVERS-KNITTERS

MONTGOMERY

WINDSOR LOCKS, CONN.

Designers and Spinners of Novelty Yarns

NEWS ABOUT MEN

FRANK W. BURNS (center), Callaway Mills, Boston, Mass., was elected president of the New England Carpet Club on March 21, succeeding DANIEL J. MEANEY of the R. H. White Co., Boston. CHESTER E. BIGELOW (right), Boston representative of the Lees-Cochrane Co., is the new vice-president, and FRANK McGEOUGH (left), of the Bay State Carpet Co., Hyde Park, Mass., is secretary-treasurer.

wool administrator of the Canadian Wartime Prices & Trade Board.

Gardiner Hawkins has been appointed executive director and treasurer of the Rayon Producers Group, and has resigned as vice-president of Deering, Milliken & Co.

C. Whitney Dall, president of the former National Rayon Weavers Association and previously partner in the old commission house of Ridley Watts & Co., New York, has become consultant for the textile and leather section of the French Supply Council, New York.

William F. Doyle, treasurer of S. D. Arrowood & Co., New York, N. Y., received the honorary degree of Doctor of Laws at the commencement of Holy Cross College, Worcester, Mass., on March 4. Mr. Doyle was assistant editor of TEXTILE WORLD from 1920 to 1922 when he joined the hosiery department of Cannon Mills in a sales capacity. He was one of the founders of his present firm of hosiery selling agents in 1929.

Carl J. Sherer and **Amos P. Smith** have been elected directors of Russell Mfg. Co., Middletown, Conn. **Ernest R. Dayton** was elected vice president; **James A. Hendley**, vice-president in charge of web manufacturing; and **Gustav Walters**, vice president in charge of belting and automotive products. **B. F. Fithian** was named assistant secretary. Mr. Sherer who is vice president and treasurer, will serve as general manager.

J. Alden Miller, superintendent in charge of plant and manufacturing, has been elected secretary of Louisville Textiles, Inc., Louisville, Ky. **H. Stewart Redman**, who joined the company in 1936 as promotion manager, was named to succeed Mr. Miller.

A. H. Vann, treasurer of Sterling Cotton Mills, Inc., Franklinton, N. C., recently announced his retirement. He had been with the mills, which were founded in 1895 by his father, the late S. C. Vann, for nearly 45 years.

Herman Parker, general manager of converting department of Atlan Fabrics Division of Textron, Inc., New York, has resigned from that post.

Frank E. Curran, treasurer of Mock - Judson - Voehringer, Inc., Greensboro, N. C., for the last 15 years, has resigned.

George Sarti has resigned as general manager and vice president of North Carolina Fabrics Corp., Yadkin, N. C., to become associated with United Merchants & Manufacturers Management Corp. He will join the company on May 14 and, as soon as priorities can be obtained, will supervise the construction and operation of the rayon dyeing and finishing plant to be built at Old Fort, N. C., for Clearwater Mfg. Co., a subsidiary of United Merchants & Manufacturers. At the North Carolina Fabrics Corp., **John Valter** has been promoted to plant superintendent from superintendent; and **John Hester**, secretary and assistant treasurer, will become vice president upon Mr. Sarti's departure.

John T. Stevens, Kershaw, S. C., vice president Springs

ONE MINUTE TALKS ON

Destroying Washroom Odors!

More and more mills everywhere are turning to the newly-developed deodorant . . . Oakite TRI-SAN . . . to destroy washroom, lavatory, locker room and similar odors. They like the *convenience* of Oakite TRI-SAN because it cleans *and* disinfects *as it deodorizes* those surfaces to which solutions are applied. They like, too, the economy of Oakite TRI-SAN . . . solutions of an ounce to a gallon of water cost *only a cent!*

FREE booklet gives many valuable sanitation tips that should prove helpful in *your* sanitation program. Let us mail you a copy *today!*

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OAKITE *Specialized* **CLEANING**
MATERIALS & METHODS FOR EVERY CLEANING REQUIREMENT

2 GOOD CHEMICALS FOR COTTON GOODS

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"VIRGINIA" (SODIUM) HYDRO

A dependable Hydrosulfite for Vat Dyeing and Stripping.

1. Crystalline, stable
2. Free-flowing; non-caking
3. Easily and Quickly soluble

Packed in 250 lb. *airtight* containers.

"VIRGINIA" (LIQUID) SO_2 THE IDEAL ANTICHLOR

The "Old Reliable" of the finishing plant. Low concentrations . . .

— remove active chlorine
— neutralize residual alkalinity
— eliminate excessive washing

Constant make-up by continuous flow to the pit. Shipped in steel cylinders containing 150 lb. net weight.

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Let us tell you about our complete Caldwell service, which includes Stainless Steel-lined tanks and tubs—round, rectangular and special shapes. *Catalog on request.*

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ALL SIZES FOR ALL PURPOSES
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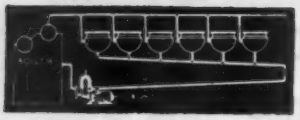
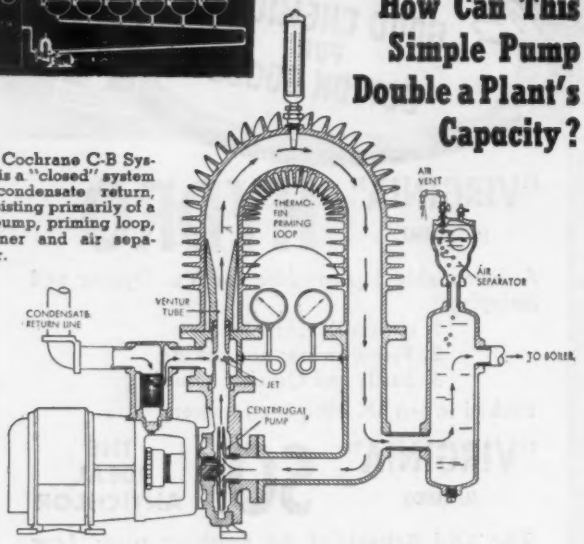
[illegible] Machine Co., 1200 No. Church St., Charlotte, N. C. Boston Office [illegible] Ave.
[illegible] Sales and Service [illegible] most important Cities.



How Can This Simple Pump Double a Plant's Capacity?

The Cochrane C-B System is a "closed" system of condensate return, consisting primarily of a jet pump, priming loop, strainer and air separator.



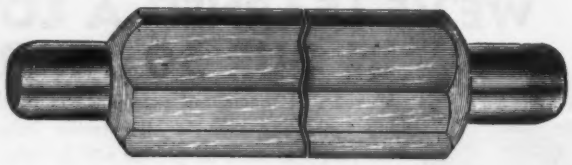
One of the most famous manufacturers of candy in the United States reports, "Before installing the C-B unit it took 12 minutes to bring our creams and caramels to the proper cooking point. After the C-B unit was installed, this time was cut to 6 minutes." In other words, without any additional cooking equipment, *plant capacity was doubled.*

Write for details of this and other remarkable C-B records.

COCHRANE CORP., 3116 N. 17th ST., PHILA. 32, PA.

COCHRANE C-B SYSTEM

CONDENSATE RETURNED TO BOILERS AT HIGH PRESSURE AND HIGH TEMPERATURE



DYE STICKS

Since 1900 we have made high quality true-form oven-seasoned dye sticks for all standard machines. We can fill your needs today to meet any requirement. Write.

FRANK BAILEY Cedar Brook, N. J.

★ ★

J. E. SIRRINE & CO.

GREENVILLE • SOUTH CAROLINA

Engineers for more than 40 years

TEXTILE MILLS • CHEMICAL PROCESS PLANTS

PULP & PAPER MILLS • WASTE DISPOSAL

STEAM POWER PLANTS • STEAM UTILIZATION

WATER • APPRAISALS • PLANS • REPORTS

NEWS ABOUT MEN

Cotton Mills, recently presented the town of Kersaw with 75 acres of land, including a 9-hole golf course and a clubhouse to be used as a recreational center.

Fessenden S. Blanchard has been appointed director of marketing of Thomson & Lichtner Co., Inc., Boston, Mass., consulting management engineers. He has resigned as president of Textile Research Institute, Inc., to accept his new post.

Lewis F. Sawyer has been named director of the newly-organized Division of Industrial Accounting of Cotton-Textile Institute to assist in problems involving profits taxes, renegotiation of contracts, and price ceilings.

W. H. Young has resigned his position with Douglas Mill, Inc., Douglasville, Ga., and has become plant manager of Marilyn Mills, Anniston, Ala.

John Thompson, Jr., formerly of Pentucket Mills, Haverhill, Mass., is now agent for Winthrop Woolen Mills, Winthrop, Me.

J. G. Sutherland became manager of Canadian Cottons, Ltd., mills in Cornwall, Ont., April 1. **J. A. Grant**, who has been manager of the Cornwall mills, will succeed Mr. Sutherland as manager of the Gibson Mill of the firm in Marysville, N. B.

George Chappelle, formerly superintendent of Belleville Woolen Co., Allenton, R. I., is now with Madison Woolen Mills, Madison, Me.

Ross P. Henry, formerly superintendent of the Pannill-Walker Knitting Co., Martinsville, Va., has been supervising the installation of machinery in the plant of the Old Dominion Knitting Co., Galax, Va. He will be superintendent of operations at the plant.

Claude Nalley, formerly head of spinning of Whitney Mill, has accepted the position of assistant superintendent of Brandon Corp., Woodruff, S. C., succeeding **F. D. Lockman, Jr.**, who has become manager of the units of Springs Cotton Mills, Fort Mill, S. C.

C. C. Jordan is now master mechanic at Pacolet Mfg. Co., New Holland, Ga. He succeeds **H. H. Grier.**

T. S. Harris, formerly with Tallassee Mills, joined the Russell Mfg. Co., Alexander City, Ala., Mar. 5, as general superintendent.

L. A. Churchville has relinquished his duties with Excelsior Mills, Union, S. C., here to be superintendent of Faith Mills, Averill Park, N. Y.

L. A. Sutherland has resigned as master mechanic at Norris Cotton Mills Co., Cateechee, S. C., and has become master mechanic at Anderson Cotton Mills, Anderson, S. C., succeeding **W. J. Ligon**, retired.

H. E. Lane has resigned as superintendent of carding and spinning at Balston Yarn Mills, Inc., Lincolnton, N. C., and become superintendent of carding and spinning at Randleman Mills, Inc., Randleman, N. C., succeeding **J. M. Reynolds**, who has gone to Berryton Mills, Berryton, Ga.

James A. Dolan has been transferred by American Woolen Co., from Mayo & Brown Mill, Dover-Foxcroft, Me., to superintendency of Kennebec Mills, Fairfield, Me.

W. G. Morgan has been made superintendent of the Payne Mill, Bibb Mfg. Co., at Macon, Ga. **E. T. McClure** is now assistant superintendent, and **B. F. Funderburke**, overseer, at the No. 2 Mill, in Macon and **E. J. Hertwig** is superintendent of twisting and weaving at the Columbus, Ga., plant.

John C. Fonville, former office manager of Burlington Mills at Reidsville, N. C., has accepted a position with Mebane Yarn Mills, Mebane, N. C. He has been succeeded at Reidsville by **O. B. Hollins**, formerly with Burlington Mills at Roanoke, Va.

Fred L. Wilson, assistant superintendent of the No. 4 unit of Cannon Mills Co., Kannapolis, N. C., since 1940, has been made superintendent of the No. 2 unit of the company at Concord, N. C., succeeding the late F. R. Shepherd. **Ray Cashion** succeeds Mr. Wilson.

L. C. Finley has become superintendent of Hannah Pickett Mills, Rockingham, N. C.

John Daly has become superintendent of Beacon Mfg. Co., Winder, Ga.

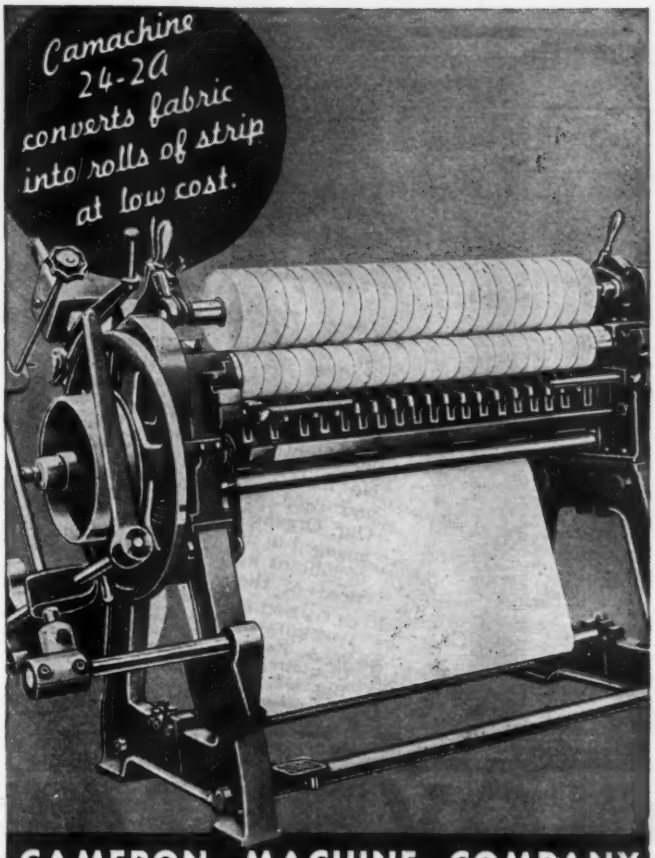
Prompt Delivery
ON BOTH STANDARD TYPES

— on **STEELGRIP** Steel Lacing that is applied with a hammer. 11 sizes — convenient boxes or long lengths with wide belts. Have 2-piece hinged rocker pins.

—on **WIREGRIP** Belt Hooks that are applied with any lacing machine and come with extra blue aligning cards (patented) that assure uniform tension on every hook and prevent card-end waste.

Write for Circulars

ARMSTRONG-BRAY & CO.
"The Belt Lacing People"
5340 Northwest Highway, Chicago 30, U.S.A.



CAMERON MACHINE COMPANY
61 POPLAR STREET BROOKLYN 2, N. Y.
MIDWEST OFFICE: 111 W. MONROE ST., CHICAGO 3, ILL.

NEW MODEL • HIGHEST ACCURACY CHRONOMETRIC TACHOMETER

Readability to 1 RPM per division. Guaranteed accuracy well within ½ of 1%. Indicates RPM directly on the dial without any calculations over a fixed period of 6 seconds. Negligible torque. Two models with ranges 0-1000 RPM or 0-10,000 RPM, each suitable for double rated range.

Write for Bulletin No. 715

HERMAN H. STICHT CO. INC.
27 PARK PLACE NEW YORK, N. Y.

COMMISSION
WINDING WARPING
YARN DYEING
PIECE GOODS DYEING

BLACKSTONE PLUSH MILLS, INC.
CLINTON, MASS.

THE OLDEST AND LARGEST
MANUFACTURER OF
Ring Spinning and Twister Travelers
In the UNITED STATES

American • Hicks • Wilson
United States Standard
Wentworth Double Duty
and Gravity Travelers

MAKE STRONGER YARN
National-Etartnap Finish
A New Chemical Treatment
Write Us

National Ring Traveler Company
354 Pine St., Pawtucket, R. I.
PHILIP C. WENTWORTH, *Treas.*
P. O. Box 1565, Providence, R. I., Charlotte, N. C.

MURDOCK Bobbin Holders

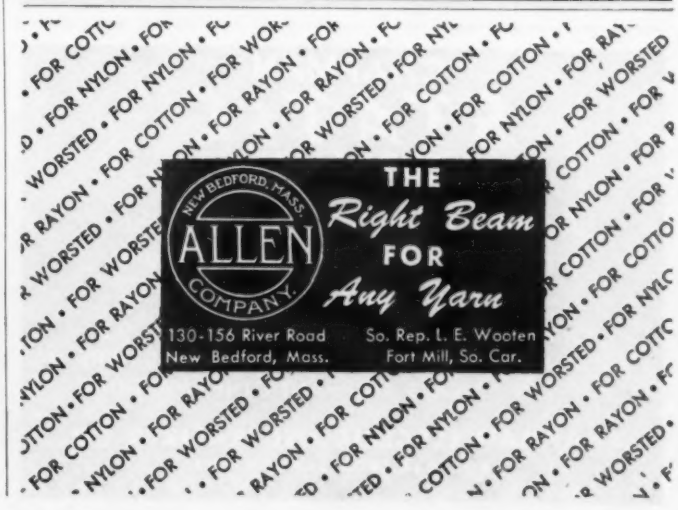
Two Exclusive Features Affording Long Life:

1. Automatic - bobbin holders equipped with holding wings electrically hardened all the way through.
2. Holding wings held positively in position by skeleton washer — no sliding around.

We make holders for ¾" to 2½" bobbin heads, including large-package wood and paper bobbins, also special bobbins. Duplex holders take both automatic and non-automatic bobbins.

Holders for all types of mules, frames, twisters, and winders.

MURDOCK & GEB CO., Franklin, Mass.
Manufacturers of Bobbin Holders for Over Fifty Years



Headquarters for every type Bobbin
For over 45 years, Cloverleaf Bobbins have been built to meet, with scientific exactness, the varying conditions and processes of individual manufacturers.
No matter what type bobbin you need, come to Cloverleaf. Our Organization is constantly engaged in developing new types of bobbins, keeping ahead of every need of the Textile Industry.
CLOVERLEAF MANUF'G CO.
HONESDALE, PA. : : SINCE 1899
W. A. Kennedy, Dillworth Station, Charlotte, N. C.; Dana R. Crawford, Box 176, Providence, Rhode Island

CLOVERLEAF
Bobbins . . . . . .

New type cone drive spindle and bobbin available at end of war.

INDUSTRIAL ENGINEERS

Specializing in

TEXTILES FOR MORE THAN A QUARTER OF A CENTURY

RALPH E. LOPER CO.

COST SYSTEMS — WORK LOAD STUDIES
PAY ROLL CONTROLS
COST REDUCTION SURVEYS — SPECIAL REPORTS

GREENVILLE, S.C. — FALL RIVER, MASS.

CHAPMAN
STATIC
NEUTRALIZER

Reduces waste and Stabilizes the production rate in many operations

USED ON

CARDS - CONDENSERS - DRAWING FRAMES
SLASHERS-WARPERS-GARNETTS-FOLDERS-DRYERS
NAPPERS - SHEARS AND MANY OTHER MACHINES

CHAPMAN ELECTRIC NEUTRALIZER CO.
BOX 268, PORTLAND, MAINE

Men in Armed Services

Dwight M. Wilhelm, formerly secretary of the Alabama Cotton Manufacturers Association, a lieutenant colonel, has been transferred from the Army Air Field at Courtland, Ala., to Craig Field at Selma, Ala., and assigned to the post of director of administration and services.

Col. Thomas W. Jones, lately director of procurement at Philadelphia QM Depot, has been transferred to New York as the Army's top representative in the newly-created joint Army-Navy procurement office. He is succeeded at Philadelphia by **Col. Herman C. Kliber.**

John D. Rollins, personnel manager and methods and standards engineer, has left that post at Galax Weaving Division of Burlington Mills Corp., Galax, Va., to enter the service. Mr. Rollins is being succeeded by **Roy W. Collins**, transferred from the St. Pauls, N. C., Division of Burlington.

Orville S. Swank, of Chicago, Ill., second lieutenant in Army QM, has arrived at Greensboro, N. C., where he will be representative in North Carolina for the cotton duck special project team of the Army Quartermaster Corps., replacing **Lt. Fred Cox.**

Daniel Harvey Hill, III, has been returned to inactive duty status as the result of wounds received while serving as captain with an Army infantry unit in Europe. He has joined the firm of Moore & Thies, Charlotte, N. C., textile cost accountants and engineers.

Rufus Dalton, 20, son of R. I. Dalton, of Charlotte, N. C., southern manager for the Whitin Machine Works, has been commissioned a second lieutenant on the battlefield. He holds the Combat Infantryman's Badge and the Purple Heart.

Wm. T. Traver, Jr., formerly with Central Franklin Process Co., Chattanooga, Tenn., and son of the president of this textile company, has been promoted to the rank of captain at his San Antonio, Tex., Army Air Station.

C. H. Barrett, son of Henry Barrett, president Dominion Woolens & Worsteds Ltd., Toronto, Ont., was recently awarded Member of the British Empire. He is at present serving as major with the 4th Canadian Infantry Brigade, Canadian Army Overseas. Previous to his enlistment he had been with Dominion Woolens & Worsteds Ltd. for six years.

Obituary

Charles M. Holmes, 80, New Bedford, Mass., retired textile executive, died Feb. 27. Before his retirement he headed Holmes Mfg. Co. He was a director of Massachusetts Life Insurance Co., Mutual Fire Insurance Co., Morris Plan Bank, New Bedford Institute of Savings, and Friends Academy.

Fred A. Powdrell, 70, for 15 years treasurer of Powdrell & Alexander, Inc., Boston, Mass., operators of textile mills at Danielson, Conn., and New Bedford, Mass., and formerly treasurer of Dartmouth Corp., died at Pomfret, Conn., on March. 20.

Walter Scott, 84, Stafford Springs, Conn., retired textile manufacturer, died Feb. 22. A native of England he came to this country as a young man. He later became overseer of the Stafford Worsted Mill, and in 1916 established the Stafford Worsted Co. of which he was vice president and general manager, retiring in 1943.

Ralph H. Paige, 67, chairman of Gardiner Hall, Jr., Co., South Willington, Conn., and a director of Berkshire Fine Spinning Associates, died at Springfield, Mass., on Mar. 19. His entire business career was identified with the textile, particularly the thread, manufacturing field.

John Franklin Schenck, 79, president of Cleveland Mill & Power Co., Lily Mills, Lawndale Railway & Industrial Co., vice president of First National Bank of Shelby, N. C., and owner of Lawndale Telephone Co., died at his home at Lawn-

dale, N. C., March 4. He was a great-grandson of Michael Schenck, who founded the first cotton mill in North Carolina in Lincoln County, 155 years ago.

Franklin P. Knipe, president of Walter E. Knipe & Sons, Inc., Philadelphia, Pa., died recently.

Albert Chapin Moulton, 76, former owner of Moulton Woolen Mills, North Rutland, Mass., died Mar. 15 in Brattleboro, Vt.

Walter W. Moyer, 66, owner and operator of Walter W. Moyer, Ephrata, Pa., underwear mill, died in Reading, Pa., recently.

Herman H. Thielmann, formerly in charge of sales for Willcox & Gibbs Sewing Machine Co., North Arlington, N. J., died Mar. 31. He became associated with the sewing machine industry in 1911 when he entered the employ of Metropolitan Sewing Machine Corp.

Henry P. Baily, 76, died recently at his home in Philadelphia, Pa. He was associated with Joshua L. Baily Co.

Charles Andrew Hunt, 72, retired textile executive, died at Lexington, N. C., recently. He organized Dacotah Cotton Mills, of Lexington, 30 years ago which he operated until his health failed.

John T. Black, 69, vice president of Standard Hosiery Mills, Alamance, N. C., died recently.

John Onslow Rankin, Sr., 83, Gastonia, N. C., one of the organizers of Dallas Cotton Mfg. Co., Dallas, N. C., and former secretary-treasurer of that corporation, died Mar. 5.

Stewart Applegath, vice-president of Jersey's Ltd., Toronto, died at his home recently.

Samuel Taus, 47, died Mar. 16 at his home, Miami Beach, Fla. Until his retirement, he was for many years owner and operator of the Taus Hosiery Mill, Philadelphia, Pa.

J. D. Williams, 50, former secretary and treasurer of Vardry Mills, Greenville, S. C., and more recently owner and operator of the Textile Warehouse Co., Greenville, died Mar. 1.

David Bradt Bartlett, lieutenant in the Army, who was associated with Aberfoyle Mfg Co., Belmont, N. C., before entering the service, died in action in the Philippines Sept. 7, 1944, according to information from the War Department.

John Rhodes Dennis, 67, treasurer of the International Braid Co., Providence, R. I., died Mar. 24. He entered the textile industry at the age of 17 in the employ of his father, then owner of Elmwood Mills.

Hugh M. Watson, 81 retired secretary of Canadian Cottons Ltd., died recently in Montreal.

John J. Fiske, 101, manager of the branch mill of Penmans Ltd., at Coaticook, Que., until his retirement a number of years ago, died recently at his home in Westmount, Que.

Frank Bullard Kenney, 79, died recently in Lowell, Mass. He was prominently known as a pioneer in development of high-speed textile machinery, and especially for the invention of high-speed cotton and rayon warpers.

James Lincoln Ashley, a director of The International Nickel Co., of Canada, Ltd., died recently in New York.

Samuel W. Reiff, 87, secretary-treasurer of J. G. Leinbach Woolen Mills, Reading, Pa., died Mar. 17. He was with Leinbach for 63 years.

John Palmer McGraw, 66, a departmental superintendent of Cutter Mfg. Co., Rock Hill, S. C., died Mar. 2.

Fred Revere Shepherd, 64, Concord, N. C., superintendent of the Cannon Mills Plant No. 2, died Mar. 15.

Lloyd G. Hooper, 66, Gastonia, N. C., formerly superintendent of Johnson Mills, Charlotte, N. C., died recently. He had also been connected with Jewell Cotton Mills, Thomasville, N. C., Wymojo Mill at Rock Hill, S. C. and Gastonia Mill Supply Co.

Alex Stewart, 50, superintendent, Bates & Innes Ltd., Carleton, Ont., died recently.

AMERICAN

... more economical to use because . . . .
it runs more efficiently, producing a finer quality product that can be sold easier and more profitably
Made of Burene multi ply mercerized cotton
4 WAYS BETTER than ordinary cottons
EXTRA COMFORT ...more absorbent
EXTRA STRENGTH ...longer wear
EXTRA QUALITY ...lasting lustre
EXTRA SERVICE ...easy to wash

AMERICAN
YARN AND PROCESSING CO
MOUNT HOLLY, NORTH CAROLINA

CHATTANOOGA, TENN.
Mr. Tom Moore
735 Chestnut Street

PHILADELPHIA, PA.
Mr. Wm. S. Montgomery
3701 N. Broad St.

HIGH POINT, N. C.
Mr. E. J. Holbrook

MOUNT HOLLY, N. C.
Mr. Edwin Hutchison
Miss E. R. Abernethy
Mr. T. J. Davis

NEW YORK, N. Y.
Mr. Rowland Swallow
Empire State Bldg.

CHICAGO, ILLINOIS
Mr. E. W. Wood
222 West Adams St.

Simplified DESIGN
Flexible POWER
Better EVAPORATION
More sensitive CONTROL

SOUTHWORTH HUMIDIFIER

Experienced textile men who know the merits of previous models of Southworth Humidifiers have found improvements in Model D that make it even more reliable and efficient.
Extreme sensitivity of control, and an "airplane propeller" type fan for greater evaporation, are two outstanding features.

NOTE
This advertisement is to remind you to include Southworth Humidifiers in your after-the-war plans. Frankly, we are 100% on war work and cannot make humidifiers at the present time.

THE SOUTHWORTH MACHINE CO.
PORTLAND MAINE

"YOU CAN COUNT ON WAK COUNTERS"

They are
RUGGED
ACCURATE
DEPENDABLE

We build single, double and triple pick counters; yardage, rotary, ratchet and special counters.

Write — Phone — Wire

WAK INDUSTRIES
CHARLOTTE, N. C.

Business Men...

DEAD FILES CAN HELP LIVE AMERICANS

Every business organization in the country has a chance now to render a patriotic service. In spite of all efforts to date, paper is still a No. 1 war material shortage.

Your dead files, old records and correspondence — all the paper not actually usable again or necessary to running your affairs—that's *war paper*. Turn it in to make bomb bands, supply parachutes, ration and blood plasma boxes.

Make a point of regularly salvaging all old paper around your place. And adopt conservation as a general rule—use *less* paper than heretofore—use as little paper as possible.

If you sell your waste paper, and your local organizations have arranged for aid to wounded veterans, it will give you real satisfaction to use some of the money for this purpose, or to support some other worthy community project.

DOUBLE V PROGRAM

SAVE WASTE PAPER

V TO SPEED VICTORY
V TO AID VETERANS
OR LOCAL PROJECTS

Newspapers: Fold them flat (the way the paper boy sells them) and tie them in bundles about 12 inches high.

Magazines and Books: Tie them in bundles about 18 inches high for easy handling by collectors.

Corrugated and Cardboard Boxes and Cartons: Flatten them out and tie them in bundles about 12 inches high.

Wastebasket Paper (Wrappers, Envelopes, Etc.): Flatten and pack down in a box or bundle, so that it can be carried.

SUPERINTENDENT WANTED

For Yarn and Fabric Finishing Plant. Must have experience and college training. This is a large finishing plant with a well established company which is doing a great deal of expanding. A position which would have a future for a man with ambition and proper qualifications. Give age, experience and salary expected, all of which will be considered confidential.

P-235, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED
Assistant Plant Engineer

30-40 Mechanical graduate preferred with executive ability. Should have previous experience in Plant Engineering and maintenance. Should be familiar with power plant and machine shop operation. Location: Massachusetts.

State age, experience, details of education, draft status, present salary and salary expected. Post war opportunity. USES certificate of availability and Draft Board clearance necessary. Send photograph.

P-238, Textile World
330 W. 42nd St., New York 18, N. Y.

WANTED
PRODUCTION MANAGER BRAIDED RUG MILL

Large eastern cotton rug manufacturer has opening in organization for production manager in braided rug division; excellent future for right man who must be conversant with all phases of business including raw materials, labor training, styling. State full details experience, age, compensation desired, etc. All replies will be held strictly confidential.

P-209, Textile World
330 West 42nd St., New York 18, N. Y.

Opportunity for Promotion Man With Textile Mill Experience

Prominent textile publication has opening in its advertising department for a promotion man who combines advertising writing ability with intimate knowledge of textile mill operations. Apply, giving complete details of past experience, age, draft status and salary requirements to

P-242, Textile World
330 W. 42nd St., New York 18, N. Y.

CHEMISTS

with textile and detergent experience. Immediate openings available with established chemical company, permanent positions either sales-service or research departments. Excellent salary and chance for advancement now and post-war. Give complete details.

P-232, Textile World
520 North Michigan Ave., Chicago 11, Ill.

POSITIONS VACANT

WANTED: MAN to take charge of quality testing laboratory experience with cotton and synthetic textiles desirable. Work will include physical and chemical analysis in relation to research and development and promotional activities of national service organization. Location Dallas, Texas. Write including education, experience, and expected salary range. National Cotton Council of America, P. O. Box M, University Station, Austin 12, Texas.

TEXTILE ENGINEER—Excellent opportunity in essential industry for a young man with research ability in engineering. Permanent responible position with reliable progressive textile manufacturer. Development program requires initiative. State age, training and experience. Include photo. P-218, Textile World, 330 W. 42nd St., New York 18, N. Y.

WANTED: Personnel Director for four textile plants. Man with experience preferred. State age, experience, references, and salary desired in first letter. P-219, Textile World, 330 W. 42nd St., New York 18, N. Y.

WANTED: Superintendent for Yarn Plant located in Western North Carolina. State age, experience, and references in first letter. P-220, Textile World, 330 W. 42nd St., New York 18, N. Y.

WANTED: EXPERIENCED Textile Man, preferably with textile school training, who can teach loom fixing on C&K S-3 looms. Give classes in rayon weaving and throwing, and has good knowledge of latest developments in synthetic yarns and textile machinery. Give full details regarding experience and salary expected, P-221, Textile World, 330 W. 42nd St., New York 18, N. Y.

WANTED: TEXTILE technician with theoretical and practical experience on carding and spinning machinery. Permanent job with good post-war possibilities. Traveling required. State salary and draft status. P-243, Textile World, 330 W. 42nd St., New York 18, N. Y.

MAN WANTED for Eastern Penna. Plant to supervise 100 sewing machine operators. Salary commensurate with experience and ability. Post-war security. P-222, Textile World, 330 W. 42nd St., New York 18, N. Y.

WANTED
Machine Designer

Graduate engineer 30-40 for design and development of Textile machinery. Should have previous development experience on existing and new machines. Should be acquainted with modern shop practice and methods. Ability to supervise group of designers and draftsmen necessary. Location: Massachusetts.

State age, experience, details of education, draft status, present salary and salary expected. Post war opportunity. USES certificate and availability and Draft Board clearance necessary. Send photograph.

P-239, Textile World
330 W. 42nd St., New York 18, N. Y.

WANTED
TIME STUDY ENGINEER

Excellent opportunity with immediate possibilities with textile firm engaged in essential production. Give complete outline concerning self in first letter. All replies confidential.

P-233, Textile World
330 W. 42nd St., New York 18, N. Y.

WANTED

Textile Manufacturer needs viscose engineer familiar with latest manufacturing methods. Should be capable of making plant layout and have knowledge of machine design. Permanent position.

P-234, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED
LACE DRAFTSMAN

Experienced, by well established firm in New York State. Apply in writing, stating details of experience.

P-205, Textile World
330 W. 42nd St., New York 18, N. Y.

EXECUTIVE

Dyeing and Finishing field. Thoroughly experienced in processing, production and equipment Northern and Southern plants desires new contact where knowledge and ability can be used to full advantage. Interested in new projects or reorganization of present setups.

PW-241, Textile World
330 W. 42nd St., New York 18, N. Y.

POSITIONS WANTED

WANTED—Position as superintendent of average size rayon weaving mill, or assistant superintendent of large mill, 12 years experience on all types of rayon yarns, some technical training, married, sober, good manager of help. PW-224, Textile World, 330 W. 42nd St., New York 18, N. Y.

SUPERINTENDENT OF Dyeing over twenty years experience in piece dyeing, gabardines, tropical worsteds, silk-white worsteds, serges, and acid piece dyeing ladies wear—also package and jackspool dyeing. Full informatoin on request. PW-228, Textile World, 330 W. 42nd St., New York 18, N. Y.

EXPORT EXECUTIVE, fully experienced export routine, industrial experience, knowledge markets, Portuguese fluently, some Spanish, able to build up post-war business, wants position with manufacturer establishing or developing export department; first-class references. PW-244, Textile World, 330 W. 42nd St., New York 18, N. Y.

WANTED—Position as knitting foreman, 28 years experience with old reliable company as foreman on cooper spring and latest needle knitting machines and payne winders. PW-247. Textile World, 520 N. Michigan Ave., Chicago 11, Ill.

ASSISTANT SUPT. thoroughly experienced in dobby and jacquard designing, loom fixing and weaving with some laboratory experience and two years as supervisor in a throwing plant. Textile graduate with 24 years experience in cotton mills. PW-248, Textile World, 330 W. 42nd St., New York 18, N. Y.

SALESMAN WANTED

COMMISSION SALESMAN wanted to handle our textile mill and industrial crayons and chalks. Reorganization leaves practically the entire United States and Canadian territories open. In first letter, include lines now carried and territory covered. SW-249. Textile World, 330 W. 42nd St., New York 18, N. Y.

SALESMEN AVAILABLE

TECHNICAL COLLEGE graduate; age 45; 22 years experience skein dyeing; desires association with dyestuffs or textile finishes manufacturer as salesman. Please give details in first letter. SA-250. Textile World, 520 N. Michigan Ave., Chicago 11, Ill.

(Continued on page 254)

NO POSTWAR SLUMP FOR YOU, BROTHER!

EXPORT TO AUSTRALIA!

Active young man, 28, vocational training at Textile Engineering Dept. of Superior Textile Technical College Chemnitz (Germany), seeks representation in Australia of American manufacturers of textile products, machinery or chemicals used in the textile trade.

RA-206, Textile World
68 Post St., San Francisco 4, Calif.

PROFESSIONAL SERVICES

LANCASTER, ALLWINE & ROMMEL

Interesting booklet concerning Inventions, Patents, Trade-Marks and Copyrights, together with Schedule of Government and Attorney's Fees, sent without obligation. Simply ask for "booklet and schedule."

Established 1915

Patents & Trade-marks

Suite 448, 815—15th St., N.W., Washington 5, D. C.

DESIGN & MANAGEMENT CORP.

Engineering, Design & Development; Labor-Saving & Textile Machinery, Inventions & Products Developed, Fabric Analysis under direct supervision of *Otto Engelhard, Noted Textile Expert.* Automatic, Hydraulic, Pneumatic, Plastic and Rubber Machinery; Tool, Electrical and Electronic Design; Standard Cost Systems, Wage Incentives, Time & Motion Studies, Job Eval., Reconversion.

82 Beaver Street — New York 5, N. Y.

Over Forty-five Years of Dependable and Confidential EMPLOYMENT SERVICE

for textile mills, converters and selling houses requiring managers, superintendents, stylers, designers, salesmen, overseers, second hands, fixers, etc. 'Phone, wire or write us your personnel requirements.

CHARLES P. RAYMOND SERVICE, Inc.

Phone: Liberty 6547 — 294 WASHINGTON STREET, BOSTON 8, MASS.

(Additional Employment Advertising on page 254)

SALESMEN AVAILABLE
(Continued from page 253)

TEXTILE SALESMAN capable, reliable, desires connection with weaver or knitter interested in selling to manufacturers in greater New York. SA-251. Textile World, 330 W. 42nd St., New York 18, N. Y.

YARN SALESMAN long experience with big following of knitters, weavers as well as others in New York area offers service commission basis. SA-252. Textile World, 330 W. 42nd St., New York 18, N. Y.

REPRESENTATIVE AVAILABLE

AGENCIES for Australia required for Manchester goods, cleaning cloth, cotton waste and general merchandise. Reply David Hyman, Merchant, 12 Henry Street, Kew, E4, Melbourne Australia. (Bankers — English, Scottish & Australian Band Ltd., Kew, Melbourne Australia.

BUSINESS OPPORTUNITIES

WANTED—PRODUCT for manufacture of sale. Manufacturer of flat-weave floor coverings is seeking suitable product for immediate or post-war manufacture or sale. BO-227. Textile World, 520 N. Michigan Ave., Chicago 11, Ill.

HIGHLY QUALIFIED rayon throwster with wide experience in the throwing field seeking (a) manufacturer having idle throwing machinery or throwing plant who desires to sell, rent or resume operations on a profit-sharing or salary basis; I have contact for yarn business. In need of a trouble shooter who knows throwing in all its phases, or (b) a manufacturer of a throwing supt. capable training own help—North or South. Married, age 44, references. BO-253. Textile World, 330 W. 42nd St., New York 18, N. Y.

Salesman-Technician Available

Textile man with 15 years plant and technical sales experience desires connection with reputable and prominent chemical manufacturer or jobber to represent them in East Tennessee, Western North Carolina and Piedmont Section of South Carolina, with headquarters in Asheville, N. C.

SA-231, Textile World
330 W. 42nd St., New York 18, N. Y.

Prepare Now for Export to Australia

Australian organization with excellent connections in the textile field, desires to act as agent in the Australian market for the sale of American textile products and machinery. First class references available. *Write to*

KELLER'S TEXTILE CO.
73-75 William Street, Sydney, Australia

FOR SALE

One good mill building in Piedmont Section of South Carolina. Large enough for 400 looms and necessary carding and spinning equipment. Has power plant to develop minimum of 600 H.P. Plenty warehouse space. 80 houses to go with mill if desired. 450 acre land.

BO-206, Textile World
330 W. 42nd St., New York 18, New York

WOOLEN MILL WANTED

Will buy, lease or invest in good mill with good equipment.

BO-180, Textile World
330 W. 42nd St., New York 18, N. Y.

WANTED

Brownell or similar machines for twisting heavy cords 8 x 10 spools. Rewinder for Rope type reels.

W-211, Textile World
330 W. 42nd St., New York 18, N. Y.

WANTED

Woolen Spinning Mill

OR

Woolen Spinning Equipment

CARDS WINDERS
MIXERS CONERS
SPINNING FRAME

W-237, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

Woolen Cards —Mules— and Pickers

of all types

Give specifications and price in first reply

P. O. Box 1534
PROVIDENCE RHODE ISLAND

WANTED

SANFORIZING MACHINE

Large textile mill wants to buy new or used Sanforizing machine. Width necessary 100 centimeter; possibly 160. Reply giving information about producing dates of machine; price, etc. to "Sanforizing", A. B. Svenska Telegrambyran, Gothenburg, Sweden.

WANTED

ONE BALING PRESS

To bale waste, size 72"x30" with upstroke either electric or hydraulic. If electric must be equipped with motor with current 60 cycle, 3 phase, 440 volts, Write full details

W-229, Textile World
330 W. 42nd St., New York 18, N. Y.

WANTED

CURTIS & MARBLE

KNIT GOODS NAPPER

W-988, Textile World
330 W. 42nd St., New York 18, N. Y.

WANTED

TWO GOOD TAPE CONDENSERS

for sixty inch cards, with four single aprons, eighty ends, twenty ends on spools, four spools each. Give full particulars, price, age, location and condition.

W-230, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

Up to 50—42" Draper Model P Looms, either motor or belt driven.

W-240, Textile World
520 North Michigan Ave., Chicago 11, Ill.

FOR SALE

Butterworth PIN DRYER

Complete with Housing
For Cloth 28" to 72" wide

HART & FOSTER CO.
York & Emerald Sts., Philadelphia 25, Pa.

MACHINERY FOR SALE

22—Bramwell Feeds—Davis & Furber—39"
4—Sliver Lappers—Whitin
4—Ribbon Lappers—Whitin
16—Combers—Whitin—Model D
8—Combers—Whitin—Model C
2—Slubbers—11x5½"—72 Spindle—Lowell
1—Intermediate—10x5—84 Spindle—Saco-Pettee
2—Interdrafts—9x4½—114 Spindle—Whitin
2—Interdrafts—8x4—128 Spindle—Woonsocket
5—Fine Frames—7x3½—168 Spindle—Lowell
2—Fine Frames—7x3—176 Spindle—Saco-Pettee
24—Spinning Frames—Saco-Pettee—208 Spindle—2¾" Gauge
90 Cone Winders—Saco-Lowell—Camless—16 Spindle
3—Tube Winders — Saco-Lowell — Camless — 16 Spindle
3—Rayon Twisters—Atwood 5-B—92 Spindle
2—Bobbin Winders—Universal #90—20 Spindle
2—Yarn Conditioning Boxes—"H&W"—Industrial Dryer Co.
1—Hygrolit Machine—Kearny—Model 3AY
1—Bobbin Stripper—"Airway"

Amoskeag-Lawrence Mills, Inc.
Manchester, N. H.

FOR SALE

HOFFMAN PRESS like New & BOILER
2—McCREARY BRUSHING MACHINES
One SPENCER OILER for PICKER
15—TOMPKINS KNITTING TABLES
EXTRA-CYLINDERS
(Both Spring & Latch Needles)
KNITTING PARTS
BURR-WHEELS
(All makes and Gages)
2—DAVIS & FUBER 80 inch NAPPERS
Davis & Furber 80" NAPPER GRINDER
Bruce Power DIE CUTTING MACHINE
McCREARY 4 roll STEAM CALENDER
2—Firsching SLITTING MACHINES
1—Ireland SLITTING MACHINE
1—Grand Rapids SLITTING MACHINE
1—Adams SLITTING MACHINE
4—PAYNE 40 sp. BOTTLE WINDERS

Geo. E. Smith Textile Machinery Co.
P. O. BOX 46 COHOES, N. Y.

FOR SALE

2 Sipp Eastwood Double Deck winders —140 spindles per machine
Type DR Double drive, Sipp Steel pipe frame, rigid traverse
Double oilless bearing swift bracked, 17 inch pin wood hub rigid wire swift
Traverse adjustable from 4-11/16 to 6"
Spool size 5¼" between heads—4¾" heads—2¾" diameter barrel
Equipped with ½ HP 550 V 60 Cycle 3 phase General Electric ball bearing motors, Double V belt drive

Used Less Than One Year

THE HARTFORD RAYON CORP.
ROCKY HILL CONNECTICUT

FOR SALE

1—Sargent Duplex 36"

BURR PICKER

$1,500.00 U. S.
1—48" Apperly Feed..$150.00 U. S.
All above in good order, offered subject being unsold, F.O.B., mill floor, crating extra, terms cash.

FS-187, Textile World
330 W. 42nd St., New York 18, N. Y.

WANTED

LOOMS

10 or more 66" Draper looms 1 x 1 automatic magazine, 20-25 harness, modified D Worsted Model.

INTERNATIONAL LOOMS, Inc.
464 FOURTH AVE. NEW YORK, N. Y.

New "SEARCHLIGHT" Advertisements

received by April 30th appear in the May issue, subject to space limitations.

Address copy to the Departmental Staff
TEXTILE WORLD
330 West 42nd St., New York 18, N. Y.

PLANNING FOR THE FUTURE IS OK . . .

BUT

if you want action NOW to BUY or SELL . . . to liquidate a complete mill or items of equipment—to convert idle machines into CASH . . . quickly . . . the down-to-earth answer is— EVERY TIME!

Check this list of what we have to offer—then contact US.

3—46" x 52" Button Breakers
3—42" Butterworth 3-Roll Friction and Rolling Calender, 1—motor driven, 2-belt dr.
1—60" D. & F. 2-cyl. Iron Shoddy Card
1—Sargent Yarn Conditioning Machine
2—100 Spindle Foster Model 25 Doublers
1—36" Doubling & Winding Machine
1—46" Windle Doubler
1—6 Delv. Whitin Drawing Frame with 12" coiler, and motor
1—4 and one 6 delv. H & B dr. frame
1—Franklin Package Dyeing Unit, incl. three 100-lb. and one 300-lb. machine, extractor and winders
1—Laboratory Hydro Extractor
1—30" American Laundry belt driven extractor
1—42" Fletcher extractor belt driven
2—Hunter No. 10 Fulling Mills
10—40" C&M 42", 46", 50", 100" Folding Machines
1—52" James Smith Card Grinder
8—1200 h. Halton Jacquards, 9" lift
60—42" Modified "E" Draper with roller tops, 47½" reed space, belt driven
18—82" C & K 4 x 4 25 Harness Belt driven woolen looms
1—336 spindle Johnson & Bassett 2" gauge mule with 24 drums
1—24" Parkhurst Burr Picker, Reconditioned

SPECIALS

1—80" Butterworth 3 roll Calender
1—Complete Set Combers including:
1—72" Yale Semi-Decating Machine with Blanket
1—72" Kenyon 2-Bowl Crab
1—Whitin Ribbon Lapper
1—Whitin Silver Lapper
8—Whitin Model "C" Combers
12—76" cloth Draper modified D automatic Looms, 81" reed space with Lacy tops for 6 harness work, motor driven
1—90" D & F Single Acting 14 Roll Napper
5—D & F Warpers with Beamers, etc., 82" to 100".
2—54" Entwistle Warpers

3—65½" Voelker double bed rotary cloth presses belt driven 16" cyl.
1—66" Gessner double bed rotary cloth press belt driven 12" diameter roll
2—50" Dinsmore Inspecting, Sewing & Rolling Machines, Mtr. Dr.

1—60" C & M Plush Shear, Arranged for Mtr. Dr.
1—84" Voelker Cloth Press, motor driven
2—66" C & M 2-Blade Shears
12—66" P & W 2-Blade Shears
1—66½" P & W Model A 2-Blade Shear
1—72" Monforts 2-Blade Shear
1—Schultze 106" Double Shear
1—Smith & Furbush Rag Shredder
1—42" C & M 5 Burner Gas Singer
1—82" Saco Lowell hot air Slasher
12—252 Sp. Whitin 2" Ring Spinners
6—24 Spindle Fairmont Drum Spoolers for 4½ x 6" spools
10,000—4½ x 6" Wooden Spools
6—120 Spindle Draper Spoolers wi. Tensions
2—Warp Compressor Machine Co., Multiple Jack Spoolers
1—60' C & M Tiger, Arranged for Mtr. Dr.
2—100 Spindle Foster #12 tube winders, belt driven
1—200-spindle Draper 2¼" Ring Tape Drive Twister
1—108-spindle F J 4½" ring Tape Drive Twister
24—72" Stafford 2x1 automatic Looms 77" reed space, 25 harness head motions, motor driven

MACHINERY LIQUIDATING COMPANY

OPA REGISTRATION NUMBER 789

EST. 1923

31-33 West 42nd Street NEW YORK 18, N. Y.

DOMESTIC TELEPHONE PEnnsylvania 6-8014 EXPORT

DEALERS IN TEXTILE MACHINERY, ACCESSORIES AND MILL SUPPLIES

PATERSON
FOR
QUICK ACTION
ON
TEXTILE EQUIPMENT

Special

10—4 x 1 Crompton and Knowles automatic woolen looms, motor driven.

24—74" 4 x 4 Crompton and Knowles woolen looms 20 harness, intermediate head, motor driven.

10—76" 4 x 4 Crompton and Knowles woolen looms, 25 harness, intermediate head, motor driven.

1 set—60" wide, metal, double cylinder card with practically new card clothing.

- 30—4 x 4, 72" Crompton & Knowles Worcester looms, roller bearing shock absorber, motor driven, 1 HP, 3 Phase motors, oversized shuttle boxes, extended bottom shaft for Jacquards.
- 24—48" Crompton & Knowles Worcester 2 x 2 box looms, 20 harness dobbies and multipliers, individually motor driven, warp stop motions, pick counters, paperless beams.
- 16—Crompton & Knowles, 4 x 4, 82" reed space, 25 harness intermediate heads, large shuttle boxes, woolen looms, individually motor driven, complete with 1 HP, 3 phase, 60 cycle, 220 volt motors.
- 50—Crompton & Knowles, 4 x 1, 52" Looms, roller bearing, shock absorber, high pickwheel, removable cloth rollers individually motor driven, warp stop motions and pick counters.
- 200 Universal #90 quillers or coppers, with or without bunch builders, belt driven or motor driven.
- Sipp or Eastwood winders to wind from skein to spool.
- Sipp or Eastwood warpers and creels.

Over 100 Jacquard Machines 624 hook coarse index
Over 60 Jacquard Machines 1304 hook fine index
Over 40 Jacquard Machines 2608 hook fine index
} ALL DOUBLE LIFT

Looms Warpers Winders	Jacquard Machines Spinning and Throwing Machines	Dyeing Machines Textile Motors Shuttles - Quillers	Coppers Finishing Machine Harnesses

• CONTACT US FOR QUICK ACTION ON TEXTILE EQUIPMENT

PATERSON SILK MACHINERY EXCHANGE

24 SPRUCE STREET • SHERWOOD 2-1363-4-5 • PATERSON, N. J.

Are YOU letting Equipment stand IDLE?
"I want Equipment put to WORK!
The sooner I get it working—the sooner this war will be over!" Uncle Sam is RIGHT. Send "CONSOLIDATED" your list TODAY.

EXTRACTORS
6—V.V. & Tolhurst 54" & 60": rubber & copper baskets.
8—V.V. Fletcher & Tolhurst 40-48", copper lined.
10—Tolhurst, American Laundry, Bock & Troy 14"-42", copper baskets.
2—48" Raw Stock Extractors.

SCOURING & DYEING
2—Haveg Washers, completely enclosed.
1—Sargent 3-Bowl Skein Scouring machine.
6—Klauder-Weldon Skein Deying Machines.
1—Obermaier Yarn Dyeing Machine.
2—Buhlman 100-arm skein dyeing machines.
1—Smith Drum Skein Dyeing Machine.
3—Double Tier Combination Beam & Package Dyers.
3—S-D Monel Rotary Dyers, 3 & 4-pocket units.

DRYERS
3—National & P & S Loop Dryers, 30-65' long.
1—P & S 72" Raw Stock Dryer, automatic feed.
1—Phila. Raw Stock Dryer, 48", automatic feeder.
3—Sargent & Hunter Wool Carbonizers.
2—P. & S. Oven type Package Dryers.
4—Truck Dryers, 1 & 2 trucks.
1—Multipass Airlay Dryer.
6—Proctor & Schwartz Yarn Dryers.
1—Pin Tenter Dryer, 64" wide.
1—V.V. 5-Tier Net Dryer.
2—Heathcote and Kenyon Cloth Dryers.
1—Proctor & Schwartz Hosiery Dryer.

NAPPERS
2—D & F single acting Nappers, 60 & 84".
3—Gessner & Woonsocket double acting Nappers, 60", 84" & 90".

TENTER FRAMES
1—Textile Fin. Mach. 90'x50" Tenter.
1—W & J 80'x50" Swing Tenter.
1—Heathcote Pin Tenter.
1—25' Tenter with Bakelite clips.

PALMER QUETCHES & TENTERS
2—V.V. Palmers, 60" & 72".
3—Morrison & V.V. 50", 60" & 72" Palmer Quetches.
1—Butterworth 80" Palmer.
2—V.V. & General Machine 60" Palmerettes.

PADDERS, MANGLES, QUETCHES
5—Textile & Butterworth 2-Roll Padders, 50", 62" & 90".
1—Butterworth 2-Roll 80" Padder.
4—Butterworth 50" 2-Roll Starch Mangles.
1—James Hunter 50" Water Manger.
5—Butterworth & Morrison 2 & 3-roll Quetches, 50-72".

BUTTON BREAKERS
3—Morrison & V.V. Button Breakers, 50-72", brass rolls.

BEAMERS—BATCHERS
4—Van Vlaanderen 50" & 60" Beamers.
9—Batchers, 48", 50" & 72".

FLAT FOLDERS & DOUBLERS
4—E & Hall Flat Folders, 42"-60", with motors.
3—P & W & Windle 46"-60" Doubling, Reeling & Measuring.

COATING MACHINES
Plastic and rubber coaters, 50"-72".

SEWING MACHINES
5—Morrow 60ABB & 60D3B on stands and tracks.
3—Union Special and Singers.

BRUSHING MACHINES
2—P & W Cloth Brushers, 72" & 100".

SLASHERS
3—Saco-Lowell Cotton Slashers.

DECATERS
3—P & W & Yale Decaters 72".

WASHERS
1—Continuous 60" Boil-Off Machine, steel tanks.
1—Van Vlaanderen 60" Open Washer.
2—Open Washers, 5 & 8 compartments, 50" face.
6—Compartment 30' Washer, 66" wide.
1—3-Compartment Monel Rotary Washer.
1—60" Open Washer.

BUY AND HOLD MORE WAR BONDS

CALENDERS
2—V.V. Ball Bearing Calenders, 50" & 60".
6—V.V. Butterworth & Textile, 3, 6 & 7-Roll Hydraulic Calenders, 80".
3—Butterworth & Perkins 40", 54" & 80" 3-Bowl Schreiners.
1—Butterworth 3-Roll 54" Friction Calender.
2—54" and 65" Embossers.

SHEARS
3—P & W 2-Blade Shears, 60" & 66½", complete with lint saving device and brushes.

DYE BECKS
12—Morrison & V.V. 6' to 9' Dye Becks, stainless steel and wood tubs.

DYE JIGS
2—Morrison 60" Dye Jigs.
4—Morrison Dye Jigs, 40", S.S.
1—Butterworth Scouring Jigg.

DRY CANS
355—Dry Cans, 50" to 112" face, 23" to 84" dia.

PRINT MACHINES & EQUIPMENT
2—BTA & BTS Motors, 25, 35 & 50 horsepower. Star gears, mandrels, copper pans & doctor blades.
1—Franklin 3-Color 45" Print Machine. Complete with Jack, and 8 Copper Rolls.

PRINTING MACHINES
7—R. B. & F 1-10 collor Print Machines, 40"-60".
1—Waldron 4-Color Wallpaper Print Machine.
1—V.V. 10-color Ribbon Print Machine.

Small Complete Woolen Mill
1—Franklin 3-color 45" Print machine, complete with copper rollers, jack, mandrels, etc.

TUBERS
5—Tubing & Measuring Machines, 50"-60".
1—Hermas 60" Measuring Machine with Motor.

KETTLES
4—Textile Copper Steam Jacketed Color Kettles, tilting, agitated, 40-150 gallons.

AGERS
2—Butterworth Cast Iron Agers, 18' & 30' lg-50-60" wide.

WEAVING MACHINES
24—C & K 92" automatic looms.
13—C & K 82" automatic looms.
10—Draper 79" automatic looms.
52—C & K 52" automatic looms.
24—C & K 4x4 Automatic Tapestry Looms, 64".
30—72" Jacquard Looms, C & K.

KNITTING MACHINES
150—1" to 21" Circular Knitting Machines.
4—Wildman 23" Ribbers.
2—Grosser Knitting Machines.

PREPARATORY MACHINES
2—Sargent & C & M Burr Pickers.
2—30" Rag Pickers.
2—40" Kitson Pickers.
1—40" Mixing Picker.
1—C & M 40" Fearnaught Picker.
2—Saco Lowell Condensors.
2—Saco Lowell Vertical Openers.
4—Panghorn Dust Collectors.
1—Conical Duster with dust blower.

CARDING MACHINES
14—Sets D&F Wool Waste Cards, 48" x 48".
3—Sets D&F Woolen Cards, 48" x 48".
1—Woolen Card, 48" x 60" diameter.
3—Sets D&F Worsted Cards, 60" x 54".
2—Sets D&F Worsted Cards, 60" x 48".
2—Sets D&F Worsted Cards, 54" x 54".
2—Furbush Worsted Cards, 48" x 48".
6—Sargent, Bramwell & Harwood Feeds.
1—Barker Triple Rub 3-bank condensor.
1—Roy Travis 90" Card Grinder.
6—French Combs.
16—Whitin D-2 Combers.
8—Hetherington Silver & Ribbon Lap Machines.

SPINNING & YARN MACHINES
52—Whitin & D&F Spinners, 240-252 spindles 2"-3½" gauge, band driven.
1—D&F Wool Spinner, 4½" gauge.
36—Deliveries H&B Drawing Frames, 12" coilers.
7—D&F 240 & 330 spindle Mules.
1—J&B 336-spindle Mule.
6—Platt Worsted Mules.
1—Sipp Double Deck Winder.
31—Fletcher Double Deck Twisters.
1—P-S Ring Twister, 5", band drive.
3—High Speed Beam Warpers.
2—Foster #101 Cone Winders.
12—Universal #50 & #90 Winders.
8—Atwood 50-B Spinners.
2—Sipp 72" Warpers.
3—Whitin & Atwood Skein Reelers.
4—Jack Spoolers, complete with creels.
7—H&B Speeders, 5" gauge.
2—Foster #12 Winders.

WATER SOFTENERS
1—Permutit Water Softener, 103" hg. 63" wd.
2—10 x 10 Vertical Softeners, Zeolite.
3—Pressure Sand Filters, 8' dia. x 20' long, complete.

FULLING MILLS
2—James Hunter #10 Fulling Mills.

GARNETTS
3—James Smith 3-cylinder Garnetts.
1—P & S Single Cylinder 20"x60" Garnett.
1—P & S 2-cylinder 20"x60" Garnett.

MISCELLANEOUS
Skein Reelers, gas boilers, blowers, scutchers, expanders, trucks, generator sets, motors, tanks, modine heaters, exhaust fans, pleaters, gears, portable agitators, humidifiers, boilers, pumps, testers, etc.

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SINGLE ITEMS
to
COMPLETE PLANTS

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For War Production Now

To Create Jobs After the War

THE KEY TO SAVING TIME AND MONEY

FOR OVER A QUARTER CENTURY A SYMBOL OF CONFIDENCE

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5th Ave. & McLean Blvd. • Tel. ARmory 4-6540

15 Park Row, New York 7, N. Y. Tel BArclay 7-0600

AGITATORS, Port. High Speed
BEAMER, 60" Van Vlaanderen
BUTTON BREAKER, Morrison 50"
CALENDERS, 3 roll, 45" VV. 52" Cav., 60" K. & K.
CALENDER, 3 roll, Friction 55"
CALENDER, 4 bowl, 2 paper, 2 steel
DECATER, Semi. C. & M. 72"x12" dia.
DECATER, Full, Gessner
DRY CANS, 12, Copper 50"x28" vert.
DRY CANS, 14, tinned copper, 68" x 23" horiz.
DRY CANS, 12 Copper, 90" face x 23" vert.
DRY CANS, 12 Copper, 12' x 23" Vert.
DRYERS, Net Conveyor, 56" x 60" wide
DRYERS, loop, P. & S. 30'
DYE BECKS, 4', 6' & 8'
DYE TUBS, Copper, skein, various lengths
EMBOSSER, 54" Textile 2 pair rolls, lever or hyd. set, optional
EXTRACTORS, Beam, 50 x 60 VV
EXTRACTOR, 26" Hercules, Open top, copper basket
EXTRACTOR, 48" Hercules, tinned copper basket open top
EXTRACTOR, 60" VV rubber bsk., loading reel
EXTRACTORS, VV Copper basket 60" x 54"
EXTRACTOR, 48" Tolhurst copper basket
FLOCK STENCIL MACHINE, with patterns
FLAT FOLDERS, Elliott & Hall, Adjust.
FULLING MILLS, Hunter, #10
INFRA RED units, complete with blowers
INSPECTION TABLES, with DC motors 47"
JIGGS, Cast Iron, 50" & 60"
JIGGS, Monel lined, 60"
KETTLE, copper til. Agit. Jack. 29" dia. x 34" deep
MEASURING MACHINE, P&W, model AWC
MOTORS, re-built & guaranteed
NAPPERS, double & single act. 66" & 72"
NASH PUMP, #3 Bronze casing
PALMER QUETCH, 54" Butterworth
PALMERETTE, 60" face, General Machine
PRINT MACHINE, 3 color 60"
PRINT MACHINE, 1 color 60"
PRINT MACHINE, 10" sample
QUETCH, 3 roll, Morrison 60".
QUETCH, 2 roll 62" lever pressure
REELING & DOUBLING Machines, VV
REEVES Drives, 000 Horiz. Enclosed
RIBBON FIN. UNIT, Complete, quetch, cans, calender, motor
RIBBON PRINTING MACHINE, complete 10 color
SEWING MACHINES, Arlington, Bicycle
SEWING MACHINES, Merrows
SHEAR, Hermas 4 Knife, 70" wide
SHEAR, P&W 66" double
SQUEEZE ROLLS, 1 pr. 80" on stand
TANK, rubber lined & covered
TENTER Dryer, Pin, Butwth return 1933
TENTER FRAME, W&J 50'x50" wide
TENTER FRAME, VV 50' x 60" wide
TENTER FRAME, W&J 30' x 50" wide
TIGERS, Dry P&W & C & M
TUBER, Paterson, Variable speed motor
TUBERS, Van Vlaanderen
WARPING MILLS, 3 yd x 180" face comp. with dial
WASHER, VV 3 compartment
WOOL WASHER, J. Hunter 6 and 8 ft.
WATER SOFTENER & FILTERS
WINDERS, Benj. Eastwood, hard silk complete with swifts

We are prepared to help you in disposing of or acquiring both complete plants and individual machines. Your inquiries cordially invited.

CADGENE MACHINERY CO.
5th Ave. & McLean Blvd.
P. O. Box 1206 Paterson 4, N. J.
Sherwood 2-3500

HARRY STEPHENSON
IMPORTER, DEALER AND MANUFACTURER
TEXTILE MACHINERY AND APPLIANCES
New and Used
River Works, Andover, Mass.

FOR SALE

BTS

1—Extractor 17" basket, direct motor drive 110 V.
1—Lowell 250 gal. Size Kettle, bronze agitator.
1—Woonsocket 24 roll DA Napper 90" rolls, clothed now 72" width.
1—Pittsburg Gas Water Heater, size #55, (practically new).
1—C&M 72" Cloth Cradle.
300—11"x36" Fibre Roving Cans with springs (new).
2—D-2 Combers 9¾" with Asperators.
Sturtevant Blowers #30 & #29 and Multivane Blower size 5.

Bobbins — SPOOLS — Box Trucks — Pulleys, Supplies, etc.
Direct Factory Agents Walter L. Parker Bobbin & Spool Co.

BAY STATE TEXTILE CO.
220 HARTWELL STREET • FALL RIVER, MASS.

FOR SALE

45—Whitin Tape Driven Spinning Frames, 240 spindles each, 1¾" rings, 3¼" gauge, Metallic Thread Boards, Separators, year 1922.
156—Model E Draper Looms, 40" cloth, 45" between swords, Lacey Top.
Crompton & Knowles Looms, 82" between swords, 4x4, 25 harness C. & K. Dobby Heads, individually motor driven with 1 HP motors, 440 volts, 2 phase, 60 cycles.
Skene & Devallee Wool Top Back Washers complete with creels, dryers and gill boxes.
16—Fales & Jenks Spinning Frames, 3" gauge, 256 spindles each, 1⅜" rings, band drive, 7" traverse, double boss.
3—60" McCreary Napping Machines, each with 10 rolls, with change gears and examining lights. One machine with internal gear drive; 5 HP Watson Motor, A.C. 2/60/220, 1140 RPM resistance box and fuse switch box. Two machines with roller chain drive; 5 HP Watson motor, A.C., 2/60/220 volt, 1150 RPM resistance box and fuse switch box.

INDUSTRIAL PLANTS CORPORATION
Department
PAUL F. LOWINGER & CO.
90 West Broadway New York 7, N. Y.

FOR SALE
BUTTERWORTH CALENDER
7 ROLLS—80" FACE
3 Composition Rolls, 4 Steel Rolls, Hydraulic lift —water-cooled journals. Located in South
AMES BAG CO.
10 EAST 40TH ST. NEW YORK CITY

TEXTILE MACHINERY
ENGINEERS & EXPORTERS
Appraisals & Liquidations
S. B. SCHWARTZ COMPANY
7301 PLUM ST. NEW ORLEANS, U.S.A.

SURPLUS MACHINERY LIST

Item 9846 DOLLY WASHER—2 Roll
36 inches wide, 1 string or Poteye, 58 inches back to front, 66 inches high
Item 9846-A RUBBER MIXER—Claridge Fan No. 13
10 x 10 inches, Square outlet, Belt driven with 12" round intake, Ball bearing, Stock moving type—Diam.
Item 4201 SIRROCCO BLOWER—Size 5
—Serial 04691—Squirrel Cage Type—Fan Diam. 26 inches, Intake 32 inches Diam., Outlet 23 x 30 inches Square
Item 537 AEROFIN UNIT HEATER—
with belt driven fan, 23 x 21 inches opening
Item 9383 APPROX.—100 Beam Flanges
26 x 28 inches diam. x 3/16 or 5/16
APPROX.—50—All Iron Beams 60" between heads with 26" Flanges
Item 5594 4 Cylinder P. & W. Tiger—
Serial 6445—66 inches wide
Item 9764 1 Single Cylinder Shear—
C. & A. 66 inch Belt Driven
Item 789 1 Voelker Steam Press—66 inches
Item 9793 1 Curtis & Marble—66 in. shear (Belt Driven)
Item 6767 1 Curtis & Marble Teasel Gig —66 inches wide 40" Diam. Single Cylinder—Belt Driven
Item R. B. 1 Woonsocket—24 roll double Acting Napper—90 inches
1 complete back washing unit
Item 11001-A BACK WASHER—1 set of 2 bowls
33" wide x 7' 4" long inside measurement x 14" deep
2 sets Nip Rolls—11" dia. x 28" face in #1 & #2 bowl
1 Nip Roll #2 bowl—13" dia. x 28" face, Upper roll Rubber covered, Lower roll Brass
3—brass Nip rolls 5" dia. x 28" face in each bowl
Item 11001-B BACK WASHER DRYER—Taylor Wadsworth & Co., Lt'd.
9 cylinder—41" C side x 11' 10" long x 7' 6" high containing 9, 23½" dia. x 31" dryer drums
5 pair glass panelled doors & 1 hatch door in top slope
Item 11001-C DOUBLE HEAD BALLING GILL BOX—C. & A. 6' 8" wide x 5' 6" long
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1—Textile 58" Scutcher, Roller Bearing, Pulley Drive.

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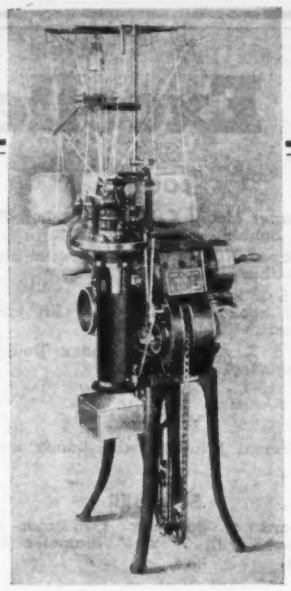

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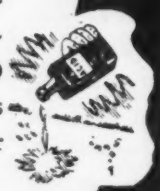

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INDEX TO ADVERTISERS

An * indicates additional data is in the 1944 Textile World Yearbook and Catalog.

*Abbott Machine Co.... 20
Aberfoyle Mfg. Co.... 22
Abington Textile Mchy. Works 15
Acme Knitting Mach. & Needle Co. 241
Alabama State Planning Board 222
Aldon Spinning Mills.. 231
Allen-Bradley Mfg. Co. Inside Back Cover
Allen Company 249
*Allis-Chalmers Mfg. Co. 7, 11
Aluminum Co. of Am.. 76
American Cyanamid & Chemical Corp. 49
American Lava Corp... 191
American Lumber & Treating Co. 229
American Magnesium Corp. 93
*American Monorail Co. 161
American Viscose Corp. 130
American Woolen Co.. 243
American Yarn & Processing Co. 251
Arco Co. 214
*Arkansas Co., Inc..... 239
Arlington Mills 238
Armour & Co..... 217
Armstrong-Bray & Co... 249
*Armstrong Cork Co.... 9
Atlantic Rayon Corp.... 212
*Atlas Electric Devices Co. 172
Bailey, Frank 248
*Barber-Colman Co...87, 235
*Barnes Co., H. K..... 157
*Bassick Co., The..... 47
Becco Sales Corp..... 51
Benjamin Elec. Mfg. Co. 171
Blackstone Plush Mills.. 249
*Booth Co., Benjamin... 210
Brinton Co. 243
Buffalo Forge Co..... 199
Bunting Brass & Bronze Co. 98
Burkart-Schier Chem. Co. 240
*Butterworth & Son Co., H. W. 122
Calco Chemical Div., American Cyanamid Co. 81
*Caldwell Co., W. E..... 247
*Cameron Machine Co... 249
Carborundum Co. 232
Carrier Corp. 34
*Carter Traveler Co., Div. A. B. Carter, Inc. 264
Century Electric Co.... 59
Chapman Electric Neutralizer Co. 250
Cheney Bros. 40
Chicago Watchclock Corp. 220
C.I.T. Financial Corp... 179
Cities Service Oil Co... 79
Clinton Company 170
Cloverleaf Mfg. Co..... 250
Cochrane Corp. 248
Coffing Hoist Co..... 200
Cole & Co., R. D..... 198
Colgate - Palmolive - Peet 195
Commonwealth Color & Chem. Co. 236
Cooper Co., Chas..... 180
Corn Products Sales Co. 213
Crabb & Son, Wm..... 134
*Crane Co. 99
*Crane Mfg. Co..... 241
Crompton & Knowles Loom Works 100
Crouse-Hinds Co. 43
Dana Warp Mills..... 231
Darnell Corp., Ltd..... 192
*Dary Ring Traveler Co. 227
*Davis & Furber Mach. 229
Dayton Rubber Mfg. Co. 25
Deering Milliken & Co. 138
Devoe & Raynolds Co... 242
Diagraph-Bradley Stencil Mach. Corp. 227
Diamond Alkali Co. Standard Silicate Div. 245
Diastator Division Standard Brands, Inc..... 204
*Dinsmore Mfg. Co..... 241
Dixie Mercerizing Co... 159
*Dommerich & Co., L. F. 54
Dow Chemical Co. 162, 169
*Draper Corporation ... 1
*Du Pont de Nemours & Co., E. I. Dyestuffs Division .. 136
Electrochemicals Dept. 97
Durant Mfg. Co..... 218
Eastern Stainless Steel Corp. 37
*Economy Baler Co..... 247
Elastic Stop Nut Corp. of America 6
Emerson Apparatus Co. 229
Emery Industries, Inc. 30
Fafnir Bearing Co., The 75
Falls Yarn Mills..... 208
Federal Telephone & Radio Corp. 39
*Fidelity Machine Co... 242
*Finnell System, Inc..... 230
Fleishel Lumber Co.... 244
*Fletcher Works 66
Ford Motor Co..... 61
Formica Insulation Co. 19
Foster Machine Co..... 24
Foxboro Co., The..... 52
Franklin Process Co.... 35
*Fuller Brush Co., The.. 165
Gardner-Denver Co.... 56
Gates Rubber Co., The. 86
General Chemical Co... 140
General Dyestuff Corp. 53
*General Electric Co..44, 45
(Lamp Dept.) 80
(Appliance & Merchandise Dept. 224
Gilmer Co., L. H., (Div. of U. S. Rubber Co.).. 94
Glidden Co., The....64, 65
Globe Dye Works..... 204
Graton & Knight Co... 126
Gulf Oil Corp. — Gulf Refining Co. 96
*H. & B. Am. Mach. Co. 36
Hecker, A. W..... 246
Heineman Corp., Oscar. 207
Henry, Andrew K..... 196
Hinde & Dauch..... 55
Hooker Electrochemical Co. 219
Horn Co. A. C..... 85
Houghton & Co., E. F.. 12
*Howard Bros. Mfg. Co. 16
*Hubbard Spool Co..... 223
*Hunt Machine Co., R... 247
*Hunter Machine Co., 181
Hyatt Bearings Div. General Motors Corp..... 62
Hyster Co. 82
Ingersoll-Rand 84
*Ives Co., L. T..... 243
*Jenkins Sons, M. W.... 208
Jenkins Bros. 21
*Johnson & Bassett Co. 26, 27
Johnson & Son, S. C.... 77
Johnson Mach. Works.. 188
Jones-Motrola Co..... 227
Kaumagraph Co. 155
*Kenyon & Son, D. R.... 245
*Lane & Bros., Inc., W.T. 225
*Laurel Soap Mfg. Co... 38
Leatex Chemical Co.... 210
Leighton Machine Co... 197
Lewellen Mfg. Co..... 221

(Continued on page 264)

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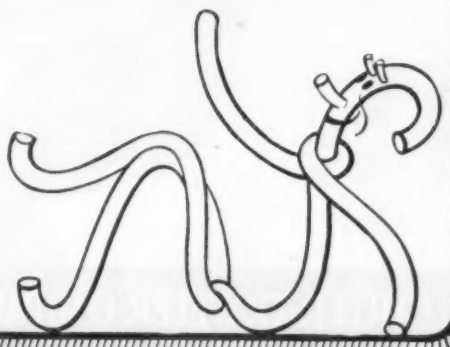

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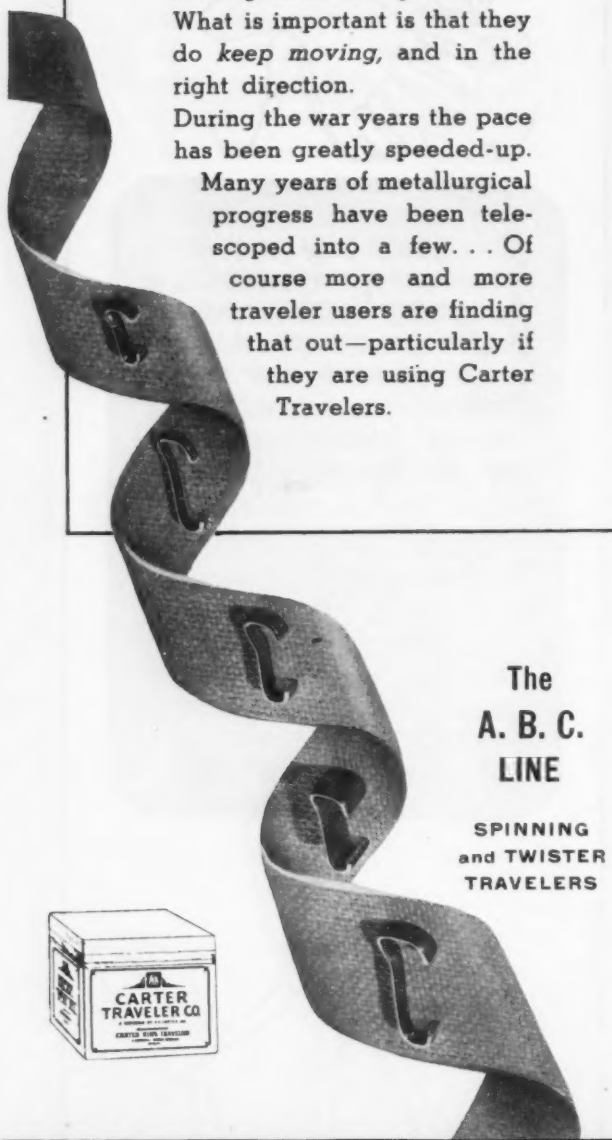

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(Continued from page 262)

Loper Co., Ralph E. 250
Lowell Shuttle Co. 178
Lunkenheimer Corp. 190
Maguire & Co., John P. 223
Manhattan Rubber Mfg. 29
Marquette Metal Products Co. 177
Meinhard, Greeff & Co. . 200
Merrow Machine Co. . . 233
Monomac Spinning Co. . 238
*Monsanto Chemical Co. 10
Montgomery Co. 246
*Murdock & Geb Co. . . . 249
National Lead Co. 46
National Oil Products Co. 91
*National Ring Trav. Co. 249
National Starch Products 63
New Departure Div. of Gen. Motors 13
New England Butt Co. 202
N. Y. & N. J. Lub. Co. . 231
Niagara Alkali Co. 183
Nonquit Mills 238
Norfolk & Western Ry. . 193
*Norma-Hoffmann Bearings Corp. 88
Nuodex Products Co. . . 221
Oakite Products, Inc. . . . 247
*Onyx Oil & Chem Co. 215
Otis Elevator Co. 74
Owens-Corning Fiberglas Corp. 42
Pabst Sales Co. 234
Parks-Cramer Co. 228
Penick & Ford Ltd. 245
Penn. Salt Mfg. Co. . . . 128
Perkins & Son, Inc., B. F. 185
Permutit Co. 173
Philadelphia Quartz Co. 198
Pittsburgh Corning Corp. 58
Pittsburgh Plate Glass Co., Columbia Chemical Div. 73
Powell Co., Wm., The . . 78
Prince-Smith & Stells 28
Procter & Gamble 95
*Proctor & Schwartz, Inc. 142, 237
Railway Express Agency, Air Express Div. 176
Red Ray Mfg. Co. 240
Refiners Lubricating Co. 186
*Reiner Inc., Rob't. 201
*Reliance Electric & Eng'g Co. 23
Reynolds Metals Co. . 68, 69
*Rhoads & Sons, J. E. 5
Richmond Oil, Soap & Chemical Co. 208
*Riggs & Lombard Inc. . . 225
*Robert & Co. . . Inside Cover
Robison Processing Co. . 263
*Rohm & Haas Co. 189
Rome Soap & Mfg. Co. 245
Roots-Connersville Blower Corp. 196
*Rumford Chemical Wks. 175
Ryerson & Son, Inc., J. T. 194
*Saco-Lowell Shops. 8
Sandoz Chemical Works 17
Sarco Corp. 41
*Scholler Bros., Inc. 209
*Scott Testers, Inc. 199
Shell Oil Co. 150
Sinclair Refining Co. . . . 70
Sirrine & Co., J. E. 248
Sonneborn Sons, Inc., L. 163
*Sonoco Products Co. 153
Southworth Mach. Co. . . 251
Split Ball Bearing Corp. 263
Square D Co. 31
Standard Brands, Inc., Diastafor Div. 204
Standard-Coosa-Thatcher 33
Standard Pressed Steel . . 203
*Standard Soap Co. of Camden 206
Stearns Magnetic Mfg. Co. 216
Steelcote Mfg. Co. 262
*Stein, Hall 211
Sterling Ring Trav. Co. . 194
Sticht Co., Inc., H. H. . . 249
Sun Oil Co. 124
Supreme Knitting Mach. Co. 187
Sylvania Electric Products, Inc. 148
Sylvania Industrial Corp. 14
Talcott Inc., James. 225
Taylor Instrument Cos. . 50
*Terrell Machine Co. 146, 244
Texas Co. 2
Textile Banking Co. 144
Textile Machine Wks. . 89, 90
*Thomas & Skinner Steel Prod. Co. 202
Tompkins Bros. Co. 233
*Torrington Co., The . . 71, 72
Towmotor Corp. 182
United Autographic Register Co. 48
U. S. Gutta Percha Paint Co. 83
*U. S. Ring Traveler Co. 206
U. S. Textile Mach. Co. 210
*Universal Winding Co. 18, 166
*Veeder-Root Inc. Back Cover
Victor Ring Traveler Co. 32
Virginia Smelting Co. . . 247
Wabash Appliance Corp. 226
WAK Industries 251
Wallerstein Co., Inc. . . . 245
Watson-Williams Co. . . 246
Wayne Mfg. Co. 210
West Disinfecting Co. . . 174
*Westinghouse Electric & Mfg. Co. 67
*Whitinsville Spinning Ring Co. 231
Whitman Co., Inc., Wm. 238
Wickwire Spencer Steel Co. 263
Wildman Mfg. Co. 205
*Wolf & Co., Jacques. . . 92
Wolstenholme Sons & Co., Inc., Thos. 231
Yale & Towne Mfg. Co., Kron Scale Div. 60
Zephyr Laundry Machy Co. 57

INDEX TO ADVERTISERS

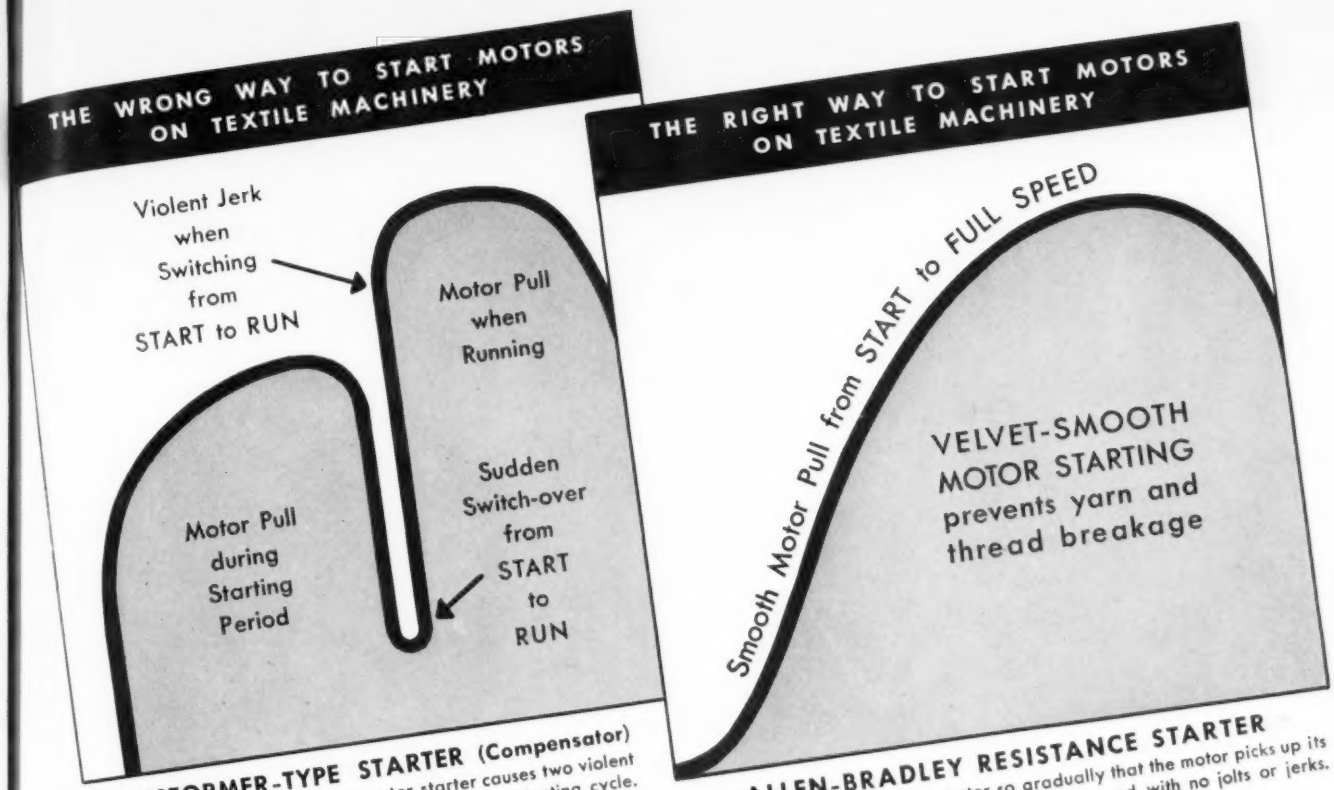
PROFESSIONAL SERVICES

Design & Management Corp. 253
Lancaster, Allwine & Rommel. . . 253
Loper & Co., Ralph E. 250
Sirrine & Co., J. E. 248

SEARCHLIGHT SECTION

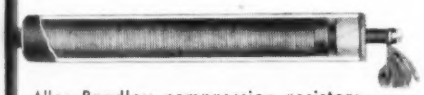
Classified Advertising

BUSINESS OPPORTUNITIES. 254
EMPLOYMENT SERVICE
Raymond Service, Inc., Charles P. 253
MILLS WANTED 254
POSITIONS VACANT 253
POSITIONS WANTED 253
SELLING OPPORTUNITIES. . 253, 254
WANTED TO PURCHASE. 254
USED EQUIPMENT 254-261
Ames Bag Co. 258, 260
Amoskeag-Lawrence Mills Inc. . . 254
Bay State Textile Co. 258
Cadgene Machinery Co. 258
Collins & Aikman Corp. 258, 260
Consolidated Products Co., Inc. 257
French, C. M. 260
Gaines Textile Mchy. Co. 260
Hart & Foster Co. 254
Hartford Rayon Corp. 254
Industrial Plants Corp. 258
International Looms Inc. 254
Machinery Liquidating Company 255
McCloskey, Inc., John L. 260
McDowell, Norman M. 261
Paterson Silk Machinery Exch. . . . 258
Republic Textile Equipment Co. . 259
Robert & Co. . . . . Second Cover
Schoonmaker, Robert 260
Schwartz Co., S. B. 258
Smith Textile Machinery Co. 254
Solomon & Co., Robert. 260
Speizman, Morris 260
Stanhope, R. C. 260
Stephenson, Harry 258
Svenska, A. B. 254
Textile Auxiliaries 260
Wheeler Co., Frank W. 258

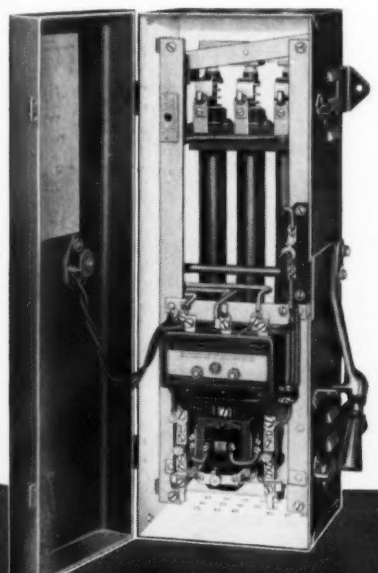

THE WRONG WAY TO START MOTORS ON TEXTILE MACHINERY
Violent Jerk when Switching from START to RUN
Motor Pull when Running
Sudden Switch-over from START to RUN
Motor Pull during Starting Period
THE RIGHT WAY TO START MOTORS ON TEXTILE MACHINERY
Smooth Motor Pull from START to FULL SPEED
VELVET-SMOOTH MOTOR STARTING prevents yarn and thread breakage

TRANSFORMER-TYPE STARTER (Compensator)
This type of alternating current motor starter causes two violent jolts or jerks to both motor and machine in each starting cycle.

ALLEN-BRADLEY RESISTANCE STARTER
Feeds starting current to the motor so gradually that the motor picks up its load from standstill and accelerates to full speed with no jolts or jerks.



Allen-Bradley compression resistors control the motor current, without jolts or jerks, as pressure on the graphite discs within the insulated steel tubes is gradually increased during the starting cycle.



HOW TO CUT YARN BREAKAGE

Above are two graphs that tell a simple but important story to textile mill operators. They show the "wrong way" and the "right way" to start textile machine motors.

The heavy black line in the left graph shows the jerky, thread-breaking jolts in power when you start motors with an ordinary compensator or transformer-type starter.

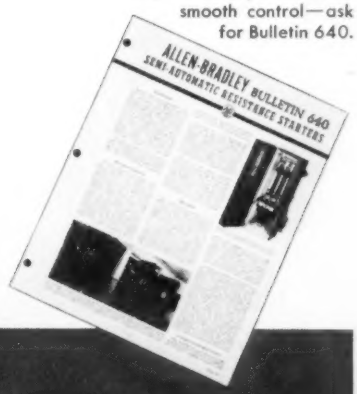
The heavy black line in the right graph shows the velvet-smooth, jerkless starting of the same motors with an Allen-Bradley resistance starter.

So gradual and so smooth is the speed change from standstill to full speed, with an Allen-Bradley resistance starter, that no sudden strain is put upon yarns or threads. The entire machine rolls up to full speed without jolt or stress. Incidentally, machine maintenance is also reduced. No other starter can equal this ideal performance for textile mills.

Let us send you Bulletin 640 telling about velvet-smooth control and how it has improved the quality and quantity of textile mill output.

Allen-Bradley Company
120 W. Greenfield Ave., Milwaukee 4, Wis.

The full story of velvet-smooth control—ask for Bulletin 640.



ALLEN-BRADLEY
QUALITY
VELVET-SMOOTH MOTOR CONTROLS

We're Never "DOWN FOR A COUNT" on any machine or process

. . . BECAUSE WE'VE GOT EVERYTHING UNDER VEEDER-ROOT COUNTROL

That's what they say in all types of mills, where Vee Root Devices are counted on to provide continuous, a rate production-records that point out any lags or s downs . . . provide a fair and square basis for wage ments . . . and in many cases also help to hold quali fabric up to specifications.

Veeder-Root engineers can always be counted o develop the new "things that count"...like the new rese figure wheel, now standard on all 2-3 Pick, Hank, Yar and Knitting Counters. This new wheel is designe eliminate over-throwing. And it is one of the many clusive Veeder-Root features which add up to give you utmost return per dollar of counter-investment. That's . . . on any counting problem . . . it always pays to call nearest Veeder-Root office.

The Counting House

Veeder-Root Inc., Hartford 2, Conn., Greenville, S. C.

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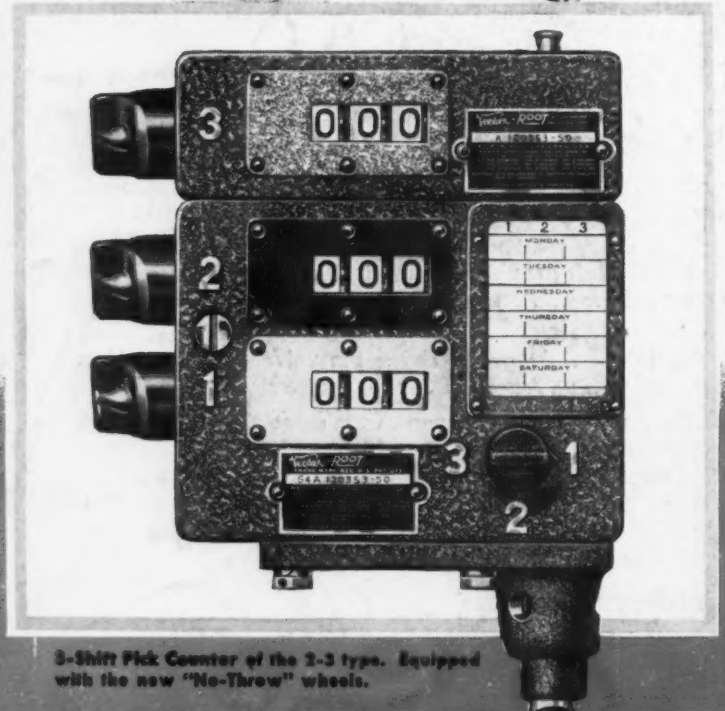
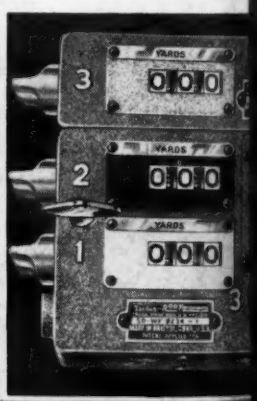
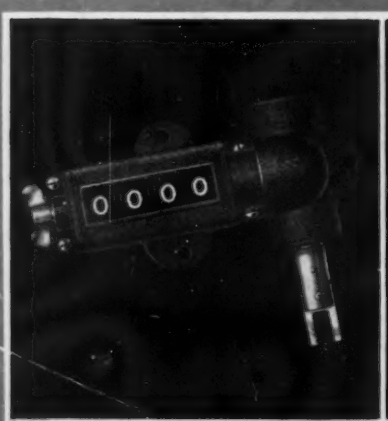


3-Shift Pick Counter of the 2-3 type. Equipped with the new "No-Throw" wheels.

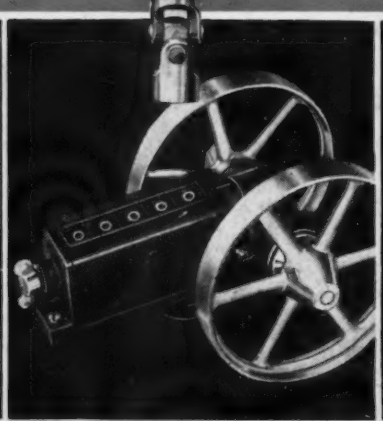
3-Shift Hank Counter of the 2-3 type. Equipped with the new "No-Throw" wheels. Right-Angle Drive optional.



3-Shift Yardage Counter type. Equipped with the Throw" wheels. Registers tens of yards, or hund



Worm-Driven Measuring Counter, with forked coupling. Registers feet, yards or other units when driven directly from end of roll.



Double-Wheel Lineal Measuring Counter, mounted on hinged arm with friction wheels running directly upon the material.

Loom Cut Meter automatically measures yardage and stops loom, without cut marks, when predetermined length has been woven.

3-Shift Knitting of the 2-3 type. For machines. Counts rev Vertical or horizontal